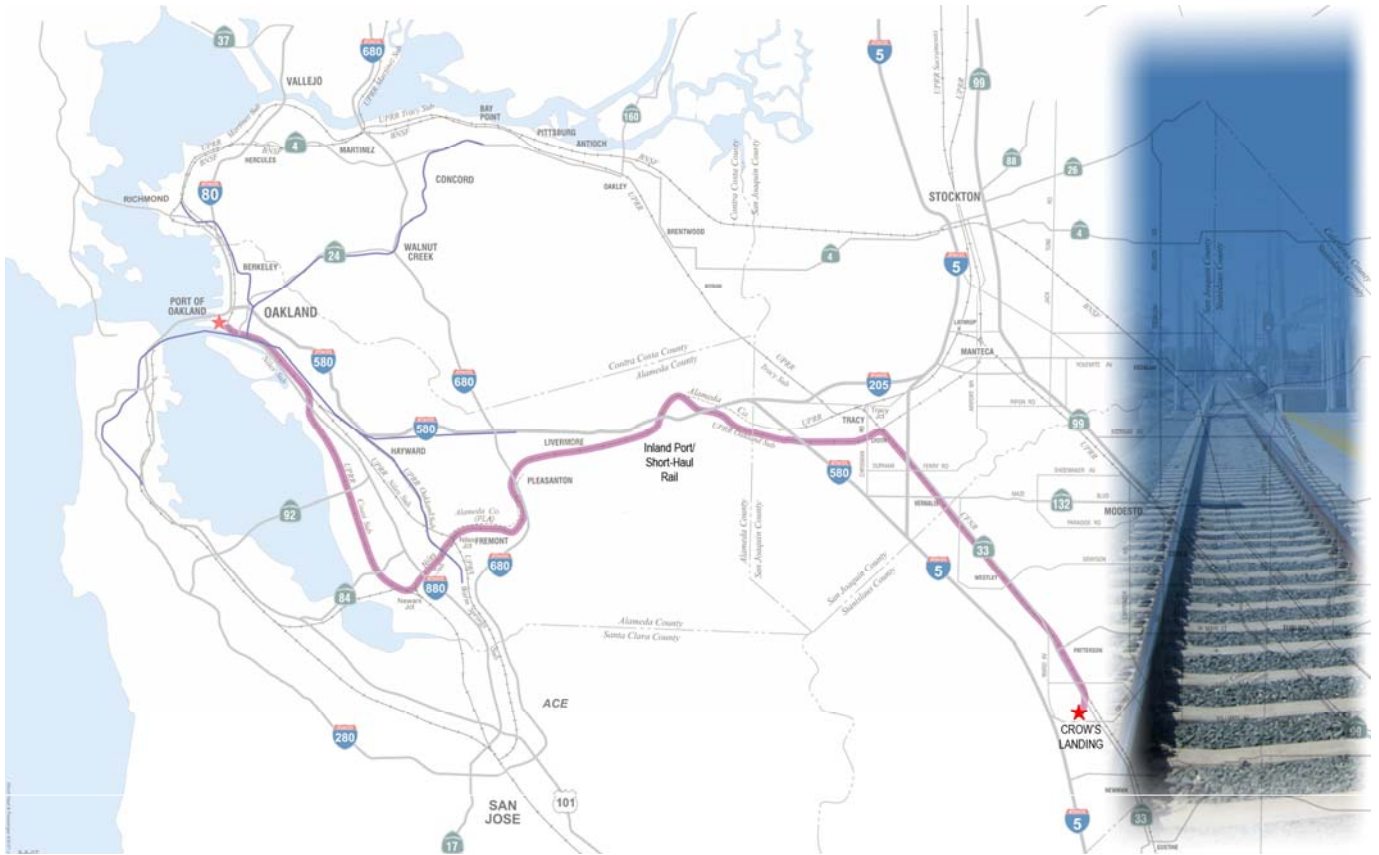


# AIR QUALITY ANALYSIS

## Northern California Inland Port/Short-Haul Rail Project

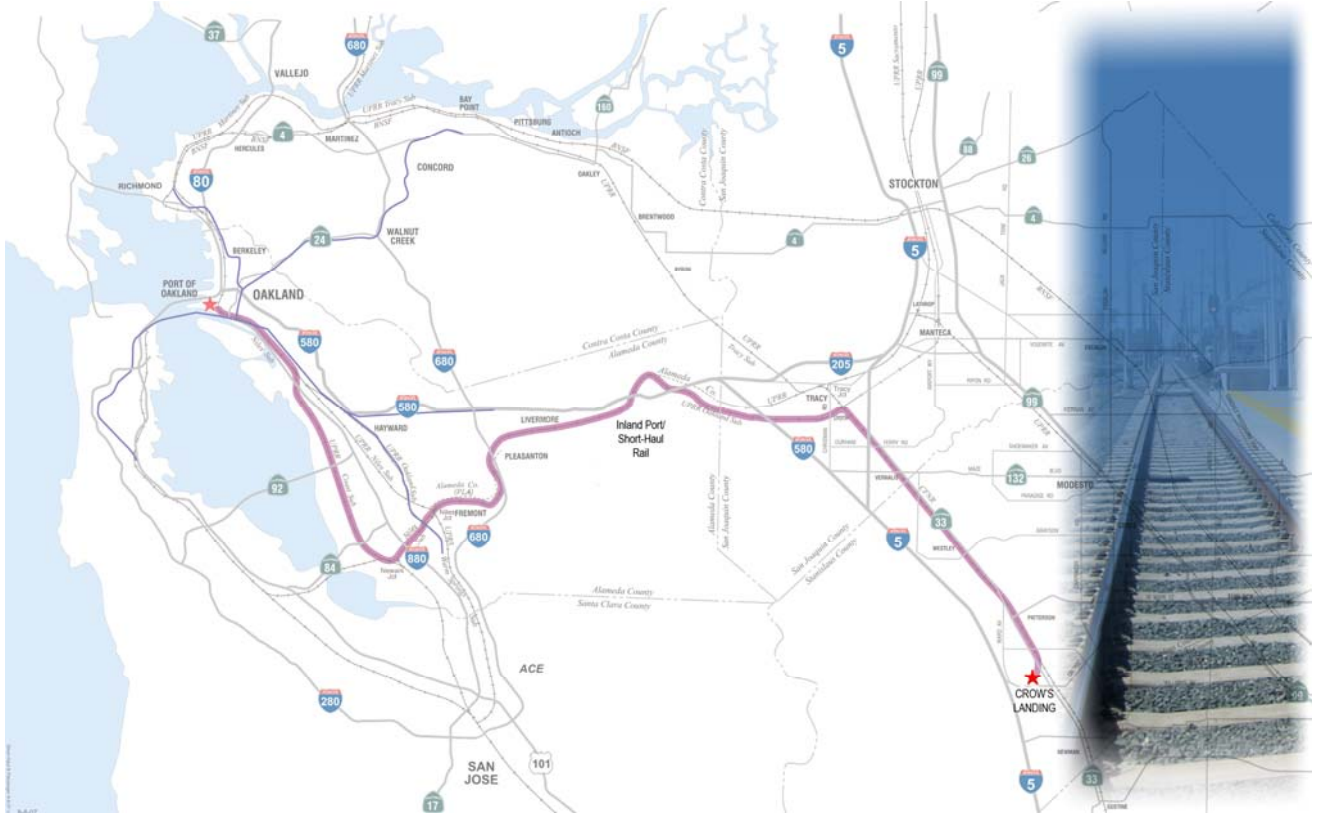


Prepared by:  
EDAW  
2022 J Street  
Sacramento, CA 95811

January 16, 2008

# AIR QUALITY ANALYSIS

## Northern California Inland Port/Short-Haul Rail Project



Prepared for:

Gerry N. Kamilos  
PCCP West Park, LLC  
11259 Gold Country Blvd., Suite 190  
Gold River, CA 95670

Prepared by:

EDAW  
2022 J Street  
Sacramento, CA 95811

Contact:

Honey Walters  
916/414-5800

January 16, 2008

EDAW | AECOM

## Acknowledgments

Principal-in-Charge: Francine Dunn  
Project Manger: Honey Walters  
Primary Author: Jake Weirich  
Graphics: Nibedita Das  
Word Processing: Amber Martin

# TABLE OF CONTENTS

<b>Section</b>	<b>Page</b>
<b>Executive Summary</b> .....	<b>1</b>
<b>Background and Task</b> .....	<b>1</b>
<b>Methodologies and Findings</b> .....	<b>2</b>
<b>References</b> .....	<b>5</b>
<b>Appendix References</b> .....	<b>5</b>
<b>Appendices</b>	
Appendix A Modeling Input and Output	
▶ A1 Table Summaries	
▶ A2 Locomotive Emission Calculations	
▶ A3 Truck Emission Calculations	
▶ A4 EMFAC Emission Factors Per County	
<b>Tables</b>	
1 Summary Comparison of Modeled Regional Emissions With and Without Implementation of the Proposed Short-Haul Rail/Inland Port Project.....	3
2 Summary of Modeled Reductions with Implementation of the Proposed Short-Haul Rail/Inland Port Project.....	4

# ACRONYMS AND ABBREVIATIONS

ARB	California Air Resources Board
Bay Area	San Francisco Bay Area
CC&Rs	Covenants, Conditions, and Restrictions
CLFF	Crows Landing Flight Facility
CNG	Compressed Natural Gas
CO <sub>2</sub> -e	carbon dioxide equivalent
County	Stanislaus County
EMFAC	Emissions Factor Model
EPA	U.S. Environmental Protection Agency
g/bhp-hr	grams per brake horsepower hour
HP	horsepower
lb	pounds
LNG	Liquid Natural Gas
NASA	National Aeronautics and Space Administration
NO <sub>x</sub>	nitrogen oxide
PM <sub>10</sub>	respirable particulate matter with an aerodynamic resistance diameter of 10 microns or less
proposed project	proposed Inland Port/Short-Haul Rail project
SJCOG	San Joaquin Council of Governments
SJVAPCD	San Joaquin Valley Air Pollution Control District
StanCOG	Stanislaus County Council of Governments
TCIF	Trade Corridor Infrastructure Funding
tpd	tons per day
tpy	tons per year
TSM	Transit Safety Management
VMT	vehicle miles traveled
West Park	PCCP West Park, LLC

## EXECUTIVE SUMMARY

Stanislaus County (County) and its private development partner, PCCP West Park, LLC (West Park) are proposing an Inland Port facility and Short-Haul Rail service as a major feature of the redevelopment of the former National Aeronautics and Space Administration (NASA) Crows Landing Flight Facility (CLFF). The proposed Inland Port would provide logistics, distribution, material processing and cargo support services to San Joaquin Valley importers and exporters of goods through the Port of Oakland. The Short-Haul Rail would strive to ensure that the growth of cargo generated between the Port of Oakland and Crows Landing could be handled with a minimum impact on regional highways and on the environment as the development of the Short-Haul Rail, using existing railroad rights-of-way, would offer a new alternative to trucking containers between the San Joaquin Valley and the Port of Oakland that does not currently exist. EDAW's task was to model the net change in regional air pollutant emissions with implementation of the proposed Inland Port/Short-Haul Rail project (proposed project) based on the best available data.

## BACKGROUND AND TASK

In 2003, the Port of Oakland, in partnership with San Joaquin Council of Governments (SJCOG) and the Alameda County Congestion Management Agency, contracted the Tioga Group to undertake a study to determine the feasibility of the proposed Short-Haul Rail service. The study found that the service was feasible and that it could have beneficial impacts as a mitigation measure for traffic congestion and air pollutant emissions associated with the growing trade between the regions. In 2006, the Tioga Group prepared an Implementation Plan for an "Inter-Regional Intermodal System" for SJCOG. The concept has been carried forward in all of the San Francisco Bay Area's (Bay Area) regional transportation plans and is included in other plans for California goods movement infrastructure development.

In October 1999, the President of the United States signed legislation authorizing the federal government to convey approximately 1,528 acres of property known as the CLFF to the County as set forth in Public Law 106-82.

In February, 2007, after a comprehensive selection process, the County approved an exclusive negotiation agreement with West Park for the development of the former military base. West Park is a Delaware Limited Liability Company formed between PCCP West Park LB, LLC and West Park Holdings, LLC. West Park is an entity owned by Lehman Brothers and Pacific Coast Capital Partners. Lehman Brothers is an international investment firm based in New York, New York and is one of the largest firms of its type in the world. Pacific Coast Capital Partners, LLC is an investment banking firm who manages a real estate portfolio of assets mostly located in the Western United States valued in excess of \$6 billion and is based in San Francisco, California.

In addition to the proposed Inland Port/Short-Haul Rail Service, the County and West Park are proposing industrial and commercial development of approximately 4,800 acres, which includes the former CLFF. Proposed uses include distribution centers, industrial facilities, business parks, and public service facilities such as medical facilities, water treatment plants, and public safety operations. Significant areas would also be retained for agricultural processing purposes. The County's land use policy position is that there would be no residential development on the site, making it ideal for inland port and industrial land uses for the long term. No residential uses are proposed.

A major and differentiating component of the proposed West Park development plan is to make the Inland Port and the creation of a San Joaquin Valley Short-Haul Rail service the centerpiece of the development. The Inland Port would provide a regional freight transportation hub and distribution, reassembly, and storage center at Crows Landing that would be connected directly by rail with terminals at the Port of Oakland. The Port of Oakland would serve the proposed project, but is not part of the West Park development proposal.

On December 18, 2007, the County Board of Supervisors passed a resolution, which identified plans for designating 170 acres of the former CLFF (or adjacent property) for a future intermodal transportation facility. In that same resolution, the County Board of Supervisors reaffirmed support for the proposed Inland Port/Short-Haul Rail on the former military air facility.

The Stanislaus County Council of Governments (StanCOG), as the Metropolitan Planning Organization for Stanislaus County, passed a resolution approving support for the development of a new rail transportation link between Crows Landing and the Bay Area. The resolution requests an application be prepared for State Trade Corridor Infrastructure Funding (TCIF) for the proposed short-haul rail link, in cooperation with the Northern California Regional Planning Agencies that includes SJCOG, Sacramento Area Council of Governments, Altamont Commuter Express, the Metropolitan Transportation Commission, and the Ports of Stockton and Sacramento. The resolution further calls for an application for air quality mitigation funding requests to the California Air Resources Board (ARB) through the San Joaquin Valley Air Pollution Control District (SJVAPCD).

EDAW's task was to model the net change in regional air pollutant emissions with implementation of the proposed project to present the best available information on possible reductions to West Park and other interested parties. EDAW based the assumptions considered in the modeling on the best available data including research conducted by Cambridge Systematics (Cambridge Systematics, Inc. 2008) and Transit Safety Management (TSM) (TSM 2007).

## **METHODOLOGIES AND FINDINGS**

Using methodologies and emission factors developed by ARB and the U.S. Environmental Protection Agency (EPA), the net change in emissions were modeled as summarized in Table 1 based on a comparison of truck- and train-related activities without and with operation of the proposed project (Cambridge Systematics, Inc. 2008, TSM 2007).

The horsepower (HP) requirement for moving a train from Crows Landing to the Port of Oakland would be on average approximately 1,206 HP per hour for 3.3 hours based on the locomotive duty-cycle modeling performed for the proposed project (TSM 2007; Pers. comm., White 2007). Using locomotive emission factors from the EPA (e.g., 5.5 grams per brake horsepower hour [g/bhp-hr] for nitrogen oxide [NO<sub>x</sub>] emissions, 0.2 g/bhp-hr for respirable particulate matter with an aerodynamic resistance diameter of 10 microns or less (PM<sub>10</sub>), and 22.2 pounds (lb) per gallon of diesel fuel for carbon dioxide equivalent [CO<sub>2</sub>-e] emissions from the use of Tier 2 locomotives), train-related emissions were modeled associated with operation of the proposed project (e.g., one round trip train per day in 2011 and five round trip trains per day in 2020). Refer to Table 1 for summary comparison of regional modeled emissions in tons per day (tpd) and tons per year (tpy).

The total daily reduction in truck vehicle miles traveled (VMT) with operation of the proposed project would be approximately 4,753 in 2011 and 43,751 in 2020 (Cambridge Systematics, Inc. 2008) (refer to Table 2). Using 2011 and 2020 emission factors from the ARB-approved 2007 Emissions Factor Model (EMFAC) (ARB 2006) per County, truck-related emissions were also modeled without and with operation of the proposed project (refer to Table 1).

Based on the modeling conducted, implementation of the proposed project would result in a total net change (i.e., reduction) of approximately 0.0358 tpd and 10.7345 tpy of NO<sub>x</sub>, 0.0020 tpd and 0.5913 tpy of PM<sub>10</sub>, and 0.6574 tpd and 197.2129 tpy of CO<sub>2</sub>-e (Tier 2 locomotive technology and 2011 truck fleet). The use of Tier 3 locomotive technology in 2011 would result in a net change of 0.0358 tpd and 10.7345 tpy of NO<sub>x</sub>, 0.0028 tpd and 0.8548 tpy of PM<sub>10</sub>, and 0.6613 tpd and 198.3888 tpy of CO<sub>2</sub>-e. The use of Tier 4 locomotive technology in 2020 would result in a net change of 0.1122 tpd and 33.6648 tpy of NO<sub>x</sub>, 0.0130 tpd and 3.9087 tpy of PM<sub>10</sub>, and 19.9791 tpd and 5,993.7320 tpy of CO<sub>2</sub>-e.

**Table 1  
Summary Comparison of Modeled Regional Emissions With and Without Implementation of the  
Proposed Short-Haul Rail/Inland Port Project**

Truck vs. Tier 2 Locomotive Technology under 2011 Conditions	NO <sub>x</sub>	PM <sub>10</sub>	CO <sub>2</sub> -e
<b>Without Project</b>			
Total (tpd) (Trucks only [12,011,060 VMT])	185.6145	8.4586	22727.4401
<b>With Project</b>			
Trucks only (tpd) (12,006,307 VMT)	185.5304	8.4549	22718.1508
Train only (tpd) (1 Train)	0.0483	0.0018	8.6319
Total (tpd) (Trucks plus Train)	185.5787	8.4566	22726.7827
Total Net Change (tpd)	0.0358	0.0020	0.6574
Total Net Change (tpy)	10.7345	0.5913	197.2129
<b>Truck vs. Tier 3 Locomotive Technology under 2011 Conditions</b>			
<b>Without Project</b>			
Total (tpd) (Trucks only [12,011,060 VMT])	185.6145	8.4586	22727.4401
<b>With Project</b>			
Trucks only (tpd) (12,006,307 VMT)	185.5304	8.4549	22718.1508
Train only (tpd) (1 Train)	0.0483	0.0009	8.6280
Total (tpd) (Trucks plus Train)	185.5787	8.4558	22726.7788
Total Net Change (tpd)	0.0358	0.0028	0.6613
Total Net Change (tpy)	10.7345	0.8548	198.3888
<b>Truck vs. Tier 4 Locomotive Technology under 2020 Conditions</b>			
<b>Without Project</b>			
Total (tpd) (Trucks only [15,696,079 VMT])	73.0378	4.4669	29757.2307
<b>With Project</b>			
Trucks only (tpd) (15,652,328 VMT)	72.8773	4.4525	29694.1590
Train only (tpd) (5 Trains)	0.0483	0.0013	43.0926
Total (tpd) (Trucks plus Trains)	72.9256	4.4539	29737.2516
Total Net Change (tpd)	0.1122	0.0130	19.9791
Total Net Change (tpy)	33.6648	3.9087	5,993.7230
Notes: VMT=vehicle miles traveled; tpd=tons per day; NO <sub>x</sub> =nitrogen oxides; PM <sub>10</sub> = respirable particulate matter with an aerodynamic diameter of 10 microns or less; CO <sub>2</sub> -e = carbon dioxide equivalent. Based on methodologies and emission factors developed by ARB and EPA; and input from modeling performed by Cambridge Systematics, Inc., for regional truck traffic, TSM for locomotive horsepower requirements, and DMJM Harris for subsidies. Subtotals may not sum to match totals due to rounding.			
Source: Data modeled by EDAW 2008			

**Table 2**  
**Summary of Modeled Reductions with Implementation of the**  
**Proposed Short-Haul Rail/Inland Port Project**

Year	Number of Trains per day	Reduction in Truck VMT	Reduction in tpy of NO <sub>x</sub>	Reduction in tpy of PM <sub>10</sub>	Reduction in tpy of CO <sub>2</sub> -e
2011	1	4,753	10.73	0.59	197.21
2013 <sup>a</sup>	2	10,185	23.00	1.27	422.60
2015 <sup>b</sup>	3	20,384	38.15	2.35	1,351.50
2016 <sup>c</sup>	4	29,846	45.43	3.20	2,647.77
2017 <sup>d</sup>	5	41,494	31.93	3.71	5,684.52
2020	5	43,751	33.66	3.91	5993.72
2021 <sup>d</sup>	6	49,046	37.74	4.38	6,719.15

Notes: VMT=vehicle miles traveled; tpy=tons per year; NO<sub>x</sub>=oxides of nitrogen; PM<sub>10</sub>= particulate matter with an aerodynamic diameter of 10 microns or less; CO<sub>2</sub>-e = carbon dioxide equivalent. Comparisons are extrapolated from the modeling presented in Table 1 for 2011 and 2020 truck fleets, and Tier 2, 3 and 4 locomotive technologies.

<sup>a</sup> Based on a 2011 truck fleet and Tier 2 locomotive technology

<sup>b</sup> Based on a combination of two thirds 2011 and one third 2020 truck fleets, and Tiers 2 and 4 locomotive technologies

<sup>c</sup> Based on one half 2011 and one half 2020 truck fleets, and Tiers 2 and 4 locomotive technologies

<sup>d</sup> Based on 2020 truck fleet and Tier 4 locomotive technology

Source: Data modeled by EDAW 2008

The drayage operations (e.g., container loading, unloading, and movement within the port) at the proposed Inland Port facility would utilize Liquid Natural Gas (LNG)/Compressed Natural Gas (CNG)/electric and/or best available control technology that meet or exceed emission standards associated with such operations. These requirements would be written into the Covenants, Conditions, and Restrictions (CC&Rs) tenant agreements to ensure compliance.

Additionally, it has been proposed that as a part of the Inland Port, a truck engine replacement or retrofit facility would be built on-site for the convenience of the trucks that use the Inland Port at Crows Landing. At this stage a quantifiable emissions reduction based on this facility inclusion is not feasible and mentioned wholly for disclosure purposes.

In summary, implementation of the proposed project would result in a reduction of NO<sub>x</sub>, PM<sub>10</sub>, and CO<sub>2</sub>-e emissions in the Bay Area and San Joaquin Valley air basins. The tonnage reduced would increase depending on the numbers of trains operating per day, train capacity, and the locomotive technology used. These reductions in air pollutant levels in the Bay Area and Central Valley trade corridors would play an important role in improving the control issues that currently exist in the Bay Area and San Joaquin Valley air basins.

## REFERENCES

ARB. *See* California Air Resources Board.

California Air Resources Board. 2006 (November). EMFAC 2007, Air Emissions Model, Version 2.3. Sacramento, CA.

Cambridge Systematics, Inc., 2008 (January). Crows Landing Project Truck Diversion Modeling. Oakland, CA

Transit Safety Management. 2007 (December). Crows Landing Project Locomotive Duty-Cycle Modeling. Boston, MA

TSM. *See* Transit Safety Management.

White, Thomas. Transportation Analyst. Transit Safety Management, Boston, MA. December 29, 2007—email message with Jake Weirich of EDAW regarding horsepower notch ratings of the SD70 and AC44 locomotive.

## APPENDIX REFERENCES

ARB. *See* California Air Resources Board.

California Air Resources Board. 2006 (November). EMFAC 2007, Air Emissions Model, Version 2.3. Sacramento, CA.

———. 2007a (October). Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Attachment B to Resolution 07-54. Sacramento, CA.

———. 2007b (October). REGULATION § 2485. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Sacramento, CA.

Cambridge Systematics, Inc., 2008 (January). Crows Landing Project Truck Diversion Modeling. Oakland, CA

EPA. *See* U.S. Environmental Protection Agency.

Transit Safety Management. 2007 (December). Crows Landing Project Locomotive Duty-Cycle Modeling. Boston, MA

TSM. *See* Transit Safety Management.

U.S. Environmental Protection Agency. 1997a (December). Emission Factors for Locomotives. Ann Arbor, MI.

———. 1997b (December). Final Emissions Standards for Locomotives. Ann Arbor, MI

———. 2005 (February). Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel. Washington, D.C.

———. 2007 (April). Control of Emissions of Air Pollution From Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder. Washington, D.C.

White, Thomas. Transportation Analyst. Transit Safety Management, Boston, MA. December 29, 2007—email message with Jake Weirich of EDAW regarding horsepower notch ratings of the SD70 and AC44 locomotive.

# **APPENDIX A**

---

Modeling Input and Output

A1  
Table Summaries

# Short Haul Rail-Truck to Train Emissions Comparison

Data Modeled by EDAW January 14, 2008

Comparison Summary Table 1

	From Crows Landing To Port of Oakland		
	NOx	PM10	CO2
<b>Tier 2 Locomotive (SD70) to 2011 Truck Modeling</b>			
Without Crows Landing (Trucks only [tons/day])	185.6145	8.4586	22727.4401
With Crows Landing (Trucks only [tons/day])	185.5304	8.4549	22718.1508
With Crows Landing (Train only [tons/day])	0.0483	0.0018	8.6319
With Crows Landing (Trucks and Train [tons/day])	185.5787	8.4566	22726.7827
Net Change tons/day	0.0358	0.0020	0.6574
Net Change tons/year	10.7345	0.5913	197.2129

	From Crows Landing To Port of Oakland		
	NOx	PM10	CO2
<b>Tier 3 Locomotive (SD70) to 2011 Truck Modeling</b>			
Without Crows Landing (Trucks only [tons/day])	185.6145	8.4586	22727.4401
With Crows Landing (Trucks only [tons/day])	185.5304	8.4549	22718.1508
With Crows Landing (Train only [tons/day])	0.0483	0.0009	8.6280
With Crows Landing (Trucks and Train [tons/day])	185.5787	8.4558	22726.7788
Net Change tons/day	0.0358	0.0028	0.6613
Net Change tons/year	10.7345	0.8548	198.3888

	From Crows Landing To Port of Oakland		
	NOx	PM10	CO2
<b>Tier 4 Locomotive (SD70) to 2020 Truck Modeling</b>			
Without Crows Landing (Trucks only [tons/day])	73.0378	4.4669	29757.2307
With Crows Landing (Trucks only [tons/day])	72.8773	4.4525	29694.1590
With Crows Landing (Train (5) only [tons/day])	0.0483	0.0013	43.0926
With Crows Landing (Trucks and Train [tons/day])	72.9256	4.4539	29737.2516
Net Change tons/day	0.1122	0.0130	19.9791
Net Change tons/year	33.6648	3.9087	5993.7230

## Truck Assumptions

Truck model year 2011, 2020 fleet mix for each County (ARB 2006)  
 VMT, speed, and county distribution (Cambridge Systematics, Inc. 2008)  
 Gross truck weight of 33,000-60,000 pounds (ARB 2006)  
 NOx, PM10 emission factors (ARB 2006, ARB 2007b)  
 CO2-e emission factors (ARB 2007a)

## Train Assumptions

SD70 line-duty locomotive, 3.27 hours of operation per trip for Crows Landing (TSM 2007; pers. comm., White 2007).  
 Emission Factors from EPA Locomotive Emission Standards (EPA 1997a, 1997b, 2005, 2007)  
 Duty Cycle and Horsepower Ratings (TSM 2007; pers. comm., White 2007)

**Reduction Summary Table 2**

Year	No. of Trains per day	Reduction in Truck VMT	Reduction in tpy of NO <sub>x</sub>	Reduction in tpy of PM <sub>10</sub>	Reduction in tpy of CO <sub>2</sub> -e
2011	1	4,753	10.73	0.59	197.21
2013 <sup>a</sup>	2	10,185	23.00	1.27	422.60
2015 <sup>b</sup>	3	20,384	38.15	2.35	1,351.50
2016 <sup>c</sup>	4	29,846	45.43	3.20	2,647.77
2017 <sup>c</sup>	5	41,494	31.93	3.71	5,684.52
2020	5	43,751	33.66	3.91	5993.72
2021 <sup>c</sup>	6	49,046	37.74	4.38	6,719.15

<sup>a</sup> Based on a 2011 truck fleet and Tier 2 locomotive technology

<sup>b</sup> Based on a combination of two thirds 2011 and one third 2020 truck fleets, and Tiers 2 and 4 locomotive technologies

<sup>c</sup> Based on one half 2011 and one half 2020 truck fleets, and Tiers 2 and 4 locomotive technologies

<sup>d</sup> Based on a 2020 truck fleet and Tier 4 locomotive technology

A2

## Locomotive Emission Calculations

SD70 Tier 2 Locomotive						PM10 Em Factor	PM10	Nox Em Factor	Nox
Notch	HP	Minutes	Hours	bhp					
0	10.8	113.79	1.8965	20.4822		0.2	4.09644	5.5	112.6521
1	202	72.89	1.214833333	245.3963333		0.2	49.07926667	5.5	1349.679833
2	435	47.38	0.789666667	343.505		0.2	68.701	5.5	1889.2775
3	978	26.73	0.4455	435.699		0.2	87.1398	5.5	2396.3445
4	1514	22.87	0.381166667	577.0863333		0.2	115.4172667	5.5	3173.974833
5	2003	13.97	0.232833333	466.3651667		0.2	93.27303333	5.5	2565.008417
6	2876	13.54	0.225666667	649.0173333		0.2	129.8034667	5.5	3569.595333
7	3640	12.77	0.212833333	774.7133333		0.2	154.9426667	5.5	4260.923333
8	4187	63.82	1.063666667	4453.572333		0.2	890.7144667	5.5	24494.64783
387.76					<b>Total PM10 (g)</b>	1593.167407		<b>Total Nox (g)</b>	43812.10368
					<b>lbs/round trip</b>	3.512333508		<b>lbs/round trip</b>	96.58917146
					<b>tons/round trip</b>	0.001756167		<b>tons/round trip</b>	0.048294586
					<b>tons/year</b>	0.526850026		<b>tons/year</b>	14.48837572

Locomotive	
ARB CO2-e	Mobile Source Emissions Fuel Method
9.96	kg/gallon of diesel
786.2171	gallons / trip
7830.722	kg / trip
7.830722	metric tons/trip
2349.217	metric tons/year
2589.568	US ton / year
8.631894	US ton / day

SD70 Tier 3 Locomotive						PM10 Em Factor	PM10	Nox Em Factor	Nox
Notch	HP	Minutes	Hours	bhp					
0	10.8	113.79	1.8965	20.4822		0.1	2.04822	5.5	112.6521
1	202	72.89	1.214833333	245.3963333		0.1	24.53963333	5.5	1349.679833
2	435	47.38	0.789666667	343.505		0.1	34.3505	5.5	1889.2775
3	978	26.73	0.4455	435.699		0.1	43.5699	5.5	2396.3445
4	1514	22.87	0.381166667	577.0863333		0.1	57.70863333	5.5	3173.974833
5	2003	13.97	0.232833333	466.3651667		0.1	46.63651667	5.5	2565.008417
6	2876	13.54	0.225666667	649.0173333		0.1	64.90173333	5.5	3569.595333
7	3640	12.77	0.212833333	774.7133333		0.1	77.47133333	5.5	4260.923333
8	4187	63.82	1.063666667	4453.572333		0.1	445.3572333	5.5	24494.64783
387.76					<b>Total PM10 (g)</b>	796.5837033		<b>Total Nox (g)</b>	43812.10368
					<b>lbs/round trip</b>	1.756166754		<b>lbs/round trip</b>	96.58917146
					<b>tons/round trip</b>	0.000878083		<b>tons/round trip</b>	0.048294586
					<b>tons/year</b>	0.263425013		<b>tons/year</b>	14.48837572

Locomotive	
ARB CO2-e	Mobile Source Emissions Fuel Method
9.96	kg/gallon of diesel
785.8601	gallons / trip
7827.167	kg / trip
7.827167	metric tons/trip
2348.15	metric tons/year
2588.392	US ton / year
8.627974	US ton / day

SD70 Tier 4 Locomotive						PM10 Em Factor	PM10	Nox Em Factor	Nox
Notch	HP	Minutes	Hours	bhp					
0	10.8	113.79	1.8965	20.4822		0.03	0.614466	1.1	22.53042
1	202	72.89	1.214833333	245.3963333		0.03	7.36189	1.1	269.9359667
2	435	47.38	0.789666667	343.505		0.03	10.30515	1.1	377.8555
3	978	26.73	0.4455	435.699		0.03	13.07097	1.1	479.2689
4	1514	22.87	0.381166667	577.0863333		0.03	17.31259	1.1	634.7949667
5	2003	13.97	0.232833333	466.3651667		0.03	13.990955	1.1	513.0016833
6	2876	13.54	0.225666667	649.0173333		0.03	19.47052	1.1	713.9190667
7	3640	12.77	0.212833333	774.7133333		0.03	23.2414	1.1	852.1846667
8	4187	63.82	1.063666667	4453.572333		0.03	133.60717	1.1	4898.929567
387.76					<b>Total PM10 (g)</b>	238.975111		<b>Total Nox (g)</b>	8762.420737
					<b>lbs/round trip</b>	0.526850026		<b>lbs/round trip</b>	19.31783429
					<b>tons/round trip</b>	0.000263425		<b>tons/round trip</b>	0.009658917
					<b>tons/year</b>	0.079027504		<b>tons/year</b>	2.897675144

Locomotive	
ARB CO2-e	Mobile Source Emissions Fuel Method
9.96	kg/gallon of diesel
784.9997	gallons / trip
7818.597	kg / trip
7.818597	metric tons/trip
2345.579	metric tons/year
2585.558	US ton / year
8.618528	US ton / day

\*Red indicates future year emission factors were not available at the time of analysis.

A3

Truck Emission Calculations

2020 NOX

County	Fresno					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	118.922	2.44	290.16968	2.44	290.16968	
10	8.5005	-	0	-	0	
15	6.356	-	0	-	0	
20	5.2795	-	0	-	0	
25	4.8615	2,459	11956.81853	2,290	11132.94852	
30	4.5145	342,449	1545988.014	407,447	1839420.395	
35	4.2385	64,709	274270.2555	-	0	
40	4.033	-	0	-	0	
45	3.899	-	0	-	0	
50	3.8355	-	0	-	0	
55	3.8435	1,063,049	4085829.604	1,063,313	4086844.376	
60	3.922	-	0	-	0	
65	4.071	-	0	-	0	
70	4.1915	-	0	-	0	
static factors	1.5455		296.736			

Fresno Total (g)	1,472,667	5918631.597	1,473,050	5937687.89
Fresno Dif (g)				-19056.29274

	wo CL	w CL		
Total NOX (g)	66258751.91	66113139.11	145612.7989	66113139.11 145612.7989
Total NOX (lbs)	146075.5434	145754.5221	321.0212705	145754.5221 321.0212705
Total NOX (t)	73.03777168	72.87726105	0.160510635	72.87726105 0.160510635
Dif NOX (g)	145612.7989			
Dif NOX (lbs)	321.0212705			
Dif NOX (t)	0.160510635			

Annual Dif NOX(t) 48.15319058

2020 PM10

County	Fresno					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	0.51	2.44	1.2444	2.44	1.2444	
10	0.351	-	0	-	0	
15	0.273	-	0	-	0	
20	0.225	-	0	-	0	
25	0.209	2,459	514.0337492	2,290	478.6148802	
30	0.199	342,449	68147.4393	407,447	81081.99327	
35	0.196	64,709	12683.01759	-	0	
40	0.201	-	0	-	0	
45	0.212	-	0	-	0	
50	0.23	-	0	-	0	
55	0.256	1,063,049	272140.5954	1,063,313	272208.1853	
60	0.288	-	0	-	0	
65	0.327	-	0	-	0	
70	0.374	-	0	-	0	
static factors	0.003		0.576			

Fresno Total (g)	1,472,667	353486.9065	1,473,050	353770.0379
Fresno Dif (g)				-283.1314231

	wo CL	w CL		
Total PM10 (g)	4052299.363	4039284.673	13014.68949	4039284.673
Total PM10 (lbs)	8933.790846	8905.098367	28.69247886	8905.098367
Total PM10 (t)	4.466895423	4.452549183	0.014346239	4.452549183
Dif PM10 (g)	13014.68949			13014.68949
Dif PM10 (lbs)	28.69247886			28.69247886
Dif PM10 (t)	0.014346239			0.014346239

Annual Dif PM10(t) 4.303871829

2020 CO2e

County	Fresno					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6475.607	2.44	15800.48108	2.44	15800.48108	
10	3150.579	-	0	-	0	
15	2580.826	-	0	-	0	
20	2168.842	-	0	-	0	
25	2027.742	2,459	4987214.463	2,290	4643576.528	
30	1909.223	342,449	653812354.2	407,447	777907570	
35	1813.05	64,709	117321148.2	-	0	
40	1739.01015	-	0	-	0	
45	1687.092	-	0	-	0	
50	1657.234	-	0	-	0	
55	1649.486	1,063,049	1753484774	1,063,313	1753920277	
60	1663.933	-	0	-	0	
65	1700.723	-	0	-	0	
70	1760.186	-	0	-	0	
static factors	34.3		6585.6			

Fresno Total (g)	1,472,667	2529627877	1,473,050	2536487224
Fresno Dif (g)				-6859346.429

	wo CL	w CL		
Total CO2e (g)	26995305583	26938087885	57217698.64	26938087885
Total CO2e (lbs)	59514461.38	59388317.94	126143.4328	59388317.94
Total CO2e (t)	29757.23069	29694.15897	63.0717164	29694.15897
Dif CO2e (g)	57217698.64			63.0717164
Dif CO2e (lbs)	126143.4328			
Dif CO2e (t)	63.0717164			

Annual Dif CO2e(t) 18921.51492

2020 NOX

County	Kern					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	118.114	2.44	288.19816	2.44	288.19816	
10	9.1215	-	0	-	0	
15	6.7835	-	0	-	0	
20	5.658	1,056	5972.332272	1,056	5972.209426	
25	5.241	2,303	12068.39983	2,303	12068.38673	
30	4.8955	6,042	29577.76992	6,042	29578.19775	
35	4.623	14,283	66031.96421	14,284	66034.638	
40	4.4225	21,402	94648.45764	21,401	94647.51687	
45	4.294	66,288	284642.1061	66,288	284641.3251	
50	4.238	198,391	840781.8636	198,391	840778.9537	
55	4.254	1,294,376	5506277.627	1,292,879	5499908.177	
60	4.342	-	0	-	0	
65	4.5025	-	0	-	0	
70	4.735	-	0	-	0	
static factors	1.2975		68.7675			
	Kern Total (g)	1,604,141	6840357.486	1,602,643	6833917.602	
	Kern Dif (g)				6439.884092	

Total NOX (g)	145612.7989
Total NOX (lbs)	
Total NOX (t)	48.15319058
Dif NOX (g)	
Dif NOX (lbs)	
Dif NOX (t)	
Annual Dif NOX(t)	

2020 PM10

County	Kern					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	0.622	2.44	1.51768	2.44	1.51768	
10	0.427	-	0	-	0	
15	0.321	-	0	-	0	
20	0.258	1,056	272.3332849	1,056	272.3276832	
25	0.236	2,303	543.4349091	2,303	543.4343194	
30	0.222	6,042	1341.285859	6,042	1341.30526	
35	0.216	14,283	3085.205336	14,284	3085.330263	
40	0.22	21,402	4708.346112	21,401	4708.299313	
45	0.231	66,288	15312.60515	66,288	15312.56313	
50	0.252	198,391	49994.5799	198,391	49994.40687	
55	0.281	1,294,376	363719.7962	1,292,879	363299.0591	
60	0.318	-	0	-	0	
65	0.364	-	0	-	0	
70	0.418	-	0	-	0	
static factors	0.003		0.159			

Kern Total (g)	1,604,141	438979.2635	1,602,643	438558.2437
Kern Dif (g)				421.0198043

Total PM10 (g)	13014.68949
Total PM10 (lbs)	
Total PM10 (t)	4.303871829
Dif PM10 (g)	
Dif PM10 (lbs)	
Dif PM10 (t)	
Annual Dif PM10(t)	

2020 CO2e

County	Kern					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6484.464	2.44	15822.09216	2.44	15822.09216	
10	3149.355	-	0	-	0	
15	2579.547	-	0	-	0	
20	2167.628	1,056	2288051.371	1,056	2288004.308	
25	2026.461	2,303	4666312.074	2,303	4666307.01	
30	1907.943	6,042	11527463.81	6,042	11527630.55	
35	1811.775	14,283	25878231.01	14,284	25879278.88	
40	1737.793	21,402	37191504.16	21,401	37191134.49	
45	1685.895	66,288	111755170.8	66,288	111754864.2	
50	1656.08	198,391	328551682.1	198,391	328550545	
55	1648.382	1,294,376	2133626922	1,292,879	2131158825	
60	1662.891	-	0	-	0	
65	1699.792	-	0	-	0	
70	1759.3635	-	0	-	0	
static factors	28.922		1532.866		1532.866	
	Kern Total (g)	1,604,141	2655502693	1,602,643	2653033944	
	Kern Dif (g)				2468748.643	

Total CO2e (g)	57217698.64
Total CO2e (lbs)	
Total CO2e (t)	18921.51492
Dif CO2e (g)	
Dif CO2e (lbs)	
Dif CO2e (t)	
Annual Dif CO2e(t)	

2020 NOX

County	Kings					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	118.426	2.4	288.95944	2.44	288.95944	
10	8.807	-	0	-	0	
15	6.5745	22,119	145422.3607	22,437	147509.5782	
20	5.4725	10,575	57873.19157	10,730	58718.40707	
25	5.0535	25,533	129033.4497	25,834	130552.328	
30	4.7065	357,808	1684022.43	357,835	1684148.646	
35	4.4305	-	0	-	0	
40	4.227	-	0	-	0	
45	4.0955	-	0	-	0	
50	4.035	-	0	-	0	
55	4.0465	336,710	1362498.448	335,176	1356289.267	
60	4.13	-	0	-	0	
65	4.2855	-	0	-	0	
70	4.512	-	0	-	0	
static factors	1.764		44.1			
	Kings Total (g)	752,746	3379182.94	752,011	3377507.185	
	Kings Dif (g)				1675.754286	

- Total NOX (g)
- Total NOX (lbs)
- Total NOX (t)
- Dif NOX (g)
- Dif NOX (lbs)
- Dif NOX (t)
  
- Annual Dif NOX(t)

2020 PM10

County	Kings					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	0.556	2.4	1.35664	2.44	1.35664	
10	0.388	-	0	-	0	
15	0.296	22,119	6547.268805	22,437	6641.240422	
20	0.242	10,575	2559.216512	10,730	2596.592875	
25	0.222	25,533	5668.432935	25,834	5735.15718	
30	0.211	357,808	75497.44668	357,835	75503.10514	
35	0.207	-	0	-	0	
40	0.211	-	0	-	0	
45	0.222	-	0	-	0	
50	0.242	-	0	-	0	
55	0.269	336,710	90575.08527	335,176	90162.31625	
60	0.304	-	0	-	0	
65	0.347	-	0	-	0	
70	0.397	-	0	-	0	
static factors	0.003		0.075			
	Kings Total (g)		180848.8818	752,011	180639.7685	
	Kings Dif (g)				209.113329	

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2020 CO2e

County	Kings					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6464.598	2.4	15773.61912	2.44	15773.61912	
10	3148.194	-	0	-	0	
15	2578.48	22,119	57033789.42	22,437	57852383.79	
20	2166.662	10,575	22913046.14	10,730	23247682.28	
25	2025.482	25,533	51717607.56	25,834	52326385.74	
30	1906.965	357,808	682326959.2	357,835	682378099	
35	1810.815	-	0	-	0	
40	1736.839	-	0	-	0	
45	1684.992	-	0	-	0	
50	1655.21	-	0	-	0	
55	1647.548	336,710	554746470.6	335,176	552218378.5	
60	1662.104	-	0	-	0	
65	1699.05	-	0	-	0	
70	1758.762	-	0	-	0	
static factors	33.159		828.975			
	Kings Total (g)		1368754476	752,011	1368038703	
	Kings Dif (g)				715772.5716	

- Total CO2e (g)
- Total CO2e (lbs)
- Total CO2e (t)
- Dif CO2e (g)
- Dif CO2e (lbs)
- Dif CO2e (t)
- Annual Dif CO2e(t)

2020 NOX						
County	Madera					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	118.862	2.44	290.02328	2.44	290.02328	
10	8.424	6	48.35542795	6	48.52210522	
15	6.304	3,648	22996.97088	3,617	22800.5134	
20	5.236	9,470	49586.81447	4,870	25498.73197	
25	4.821	15,116	72874.21035	19,692	94934.65359	
30	4.4755	20,827	93210.17672	97,783	437627.6395	
35	4.201	81,940	344229.3935	25,973	109113.5166	
40	3.997	98,644	394281.2801	86,144	344318.821	
45	3.8635	80,749	311973.0114	91,426	353225.3885	
50	3.8	375,829	1428150.915	350,346	1331316.549	
55	3.808	2,518,088	9588879.704	2,525,104	9615594.662	
60	3.8855	-	0	-	0	
65	4.034	-	0	-	0	
70	4.253	-	0	-	0	
static factors	1.88		67.68			
	Madera Total (g)	3,204,317	12306588.53	3,204,961	12334769.02	
	Madera Dif (g)				-28180.48631	

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)  
  
 Annual Dif NOX(t)

2020 PM10

County	Madera					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	0.494	2.44	1.20536	2.44	1.20536	
10	0.361	6	2.072211478	6	2.079354224	
15	0.28	3,648	1021.439062	3,617	1012.713159	
20	0.231	9,470	2187.653579	4,870	1124.944058	
25	0.213	15,116	3219.706867	19,692	4194.374863	
30	0.203	20,827	4227.83284	97,783	19849.94097	
35	0.2	81,940	16387.97398	25,973	5194.644923	
40	0.205	98,644	20222.08217	86,144	17659.58426	
45	0.216	80,749	17441.74206	91,426	19748.074	
50	0.235	375,829	88319.85919	350,346	82331.41817	
55	0.261	2,518,088	657221.0091	2,525,104	659052.0501	
60	0.295	-	0	-	0	
65	0.335	-	0	-	0	
70	0.383	-	0	-	0	
static factors	0.003		0.108			
	Madera Total (g)	3,204,317	810252.6844	3,204,961	810171.0292	
	Madera Dif (g)				81.65522258	

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2020 CO2e						
County	Madera					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6467.717	2.44	15781.22948	2.44	15781.22948	
10	3148.873	6	18075.1545	6	18137.4581	
15	2579.165	3,648	9408785.277	3,617	9328408.334	
20	2167.313	9,470	20525238.28	4,870	10554570.91	
25	2026.135	15,116	30627045.88	19,692	39898449.36	
30	1907.617	20,827	39729486.69	97,783	186532437.7	
35	1811.454	81,940	148430305.1	25,973	47049301.63	
40	1737.481	98,644	171392602.6	86,144	149674107.9	
45	1685.613	80,749	136111236.9	91,426	154109306.8	
50	1655.809	375,829	622301352.1	350,346	580106822	
55	1648.122	2,518,088	4150116490	2,525,104	4161678862	
60	1662.625	-	0	-	0	
65	1699.546	-	0	-	0	
70	1759.185	-	0	-	0	
static factors	35.417		1275.012			
	Madera Total (g)	3,204,317	5328677674	3,204,961	5338966185	
	Madera Dif (g)				-10288510.48	

Total CO2e (g)  
Total CO2e (lbs)  
Total CO2e (t)  
Dif CO2e (g)  
Dif CO2e (lbs)  
Dif CO2e (t)

Annual Dif CO2e(t)

2020 NOX						
County	Merced					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	118.383	2.44	288.85452	2.44	288.85452	
10	9.251	-	0	-	0	
15	6.911	917	6335.737856	904	6250.283679	
20	5.7515	1,317	7573.974302	1,268	7293.959776	
25	5.308	9,692	51446.68459	8,648	45904.18285	
30	4.9405	8,954	44237.75561	9,677	47810.16731	
35	4.649	27,591	128269.646	27,954	129959.2542	
40	4.4325	15,871	70349.66767	20,656	91555.59951	
45	4.293	210,666	904387.2065	228,130	979363.2916	
50	4.2285	27,947	118173.0172	25,278	106889.1791	
55	4.24	889,034	3769504.814	875,775	3713284.557	
60	4.3275	-	0	-	0	
65	4.4905	-	0	-	0	
70	4.7295	-	0	-	0	
static factors	1.7375		57.3375			
	Merced Total (g)	1,191,989	5100624.696	1,198,291	5128599.329	
	Merced Dif (g)				-27974.63317	

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)  
  
 Annual Dif NOX(t)

2020 PM10

County	Merced					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	0.55	2.44	1.342	2.44	1.342	
10	0.415	-	0	-	0	
15	0.316	917	289.6965942	904	285.7892697	
20	0.256	1,317	337.1185641	1,268	324.6550817	
25	0.235	9,692	2277.68856	8,648	2032.306513	
30	0.222	8,954	1987.811304	9,677	2148.336635	
35	0.218	27,591	6014.795189	27,954	6094.023964	
40	0.222	15,871	3523.435132	20,656	4585.525796	
45	0.235	210,666	49506.40427	228,130	53610.61578	
50	0.256	27,947	7154.379192	25,278	6471.23799	
55	0.285	889,034	253374.734	875,775	249595.778	
60	0.323	-	0	-	0	
65	0.369	-	0	-	0	
70	0.423	-	0	-	0	
static factors	0.003		0.099			
	Merced Total (g)	1,191,989	324467.5038	1,198,291	325149.611	
	Merced Dif (g)				-682.1072328	

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2020 CO2e						
County	Merced					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6460.735	2.44	15764.1934	2.44	15764.1934	
10	3147.507	-	0	-	0	
15	2577.751	917	2363182.549	904	2331308.784	
20	2165.956	1,317	2852281.159	1,268	2746830.555	
25	2024.727	9,692	19624244.79	8,648	17510067.53	
30	1906.211	8,954	17068413.39	9,677	18446769.93	
35	1810.055	27,591	49940872.04	27,954	50598708.93	
40	1736.1275	15,871	27554651.47	20,656	35860619.08	
45	1834.279	210,666	386419394.5	228,130	418454581.7	
50	1654.524	27,947	46238640.93	25,278	41823510.02	
55	1646.891	889,034	1464142347	875,775	1442305405	
60	1661.485	-	0	-	0	
65	1698.506	-	0	-	0	
70	1758.304	-	0	-	0	
static factors	31.2825		1032.3225			
	Merced Total (g)	1,191,989	2016220825	1,198,291	2030093566	
	Merced Dif (g)				-13872740.83	

Total CO2e (g)  
Total CO2e (lbs)  
Total CO2e (t)  
Dif CO2e (g)  
Dif CO2e (lbs)  
Dif CO2e (t)

Annual Dif CO2e(t)

2020 NOX

County	San Joaquin					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	117.963	2.44	287.82972	2.44	287.82972	
10	9.196	-	0	-	0	
15	6.835	-	0	-	0	
20	5.7065	-	0	-	0	
25	5.292	452	2394.574603	452	2393.965351	
30	4.9495	415,795	2057976.958	415,872	2058358.815	
35	4.679	-	0	-	0	
40	4.481	1,355	6073.964321	1,355	6073.964321	
45	4.355	1,204	5241.942571	1,204	5241.942571	
50	4.3005	-	0	-	0	
55	4.3185	4,240,502	18312608.55	4,213,125	18194380.56	
60	4.4085	-	0	-	0	
65	4.5705	-	0	-	0	
70	4.8045	-	0	-	0	
static factors	2.2095		117.1035			
	SanJoaquin Total (g)	4,659,309	20384700.92	4,632,009	20266737.07	
	SanJoaquin Dif (g)				117963.8508	

- Total NOX (g)
- Total NOX (lbs)
- Total NOX (t)
- Dif NOX (g)
- Dif NOX (lbs)
- Dif NOX (t)

Annual Dif NOX(t)

2020 PM10

County	San Joaquin					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	0.644	2.44	1.57136	2.44	1.57136	
10	0.432	-	0	-	0	
15	0.323	-	0	-	0	
20	0.26	-	0	-	0	
25	0.237	452	107.2400191	452	107.212734	
30	0.223	415,795	92722.26724	415,872	92739.47182	
35	0.217	-	0	-	0	
40	0.22	1,355	298.2084692	1,355	298.2084692	
45	0.232	1,204	279.2492942	1,204	279.2492942	
50	0.252	-	0	-	0	
55	0.281	4,240,502	1191581.105	4,213,125	1183888.141	
60	0.318	-	0	-	0	
65	0.364	-	0	-	0	
70	0.419	-	0	-	0	
static factors	0.003		0.159			
	SanJoaquin Total (g)		1284989.801	4,632,009	1277313.854	
	SanJoaquin Dif (g)				7675.94606	

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2020 CO2e

County	San Joaquin					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6468.277	2.44	15782.59588	2.44	15782.59588	
10	3149.0855	-	0	-	0	
15	2579.301	-	0	-	0	
20	2167.382	-	0	-	0	
25	2026.206	452	916837.0047	452	916603.7337	
30	1907.688	415,795	793206980	415,872	793354159.3	
35	1811.525	-	0	-	0	
40	1767.55	1,355	2395901.726	1,355	2395901.726	
45	1685.66	1,204	2028962.782	1,204	2028962.782	
50	1655.854	-	0	-	0	
55	1648.1745	4,240,502	6989087517	4,213,125	6943965283	
60	1662.686	-	0	-	0	
65	1699.604	-	0	-	0	
70	1759.259	-	0	-	0	
static factors	39.175		2076.275			

SanJoaquin Total (g)	7787654057	4,632,009	7742676693
SanJoaquin Dif (g)			44977364.02

Total CO2e (g)  
 Total CO2e (lbs)  
 Total CO2e (t)  
 Dif CO2e (g)  
 Dif CO2e (lbs)  
 Dif CO2e (t)

Annual Dif CO2e(t)

2020 NOX

County	Stanislaus					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)		118.68	2.44	289.5792	2.44	289.5792
10	7.527	25,697	193421.8519	23,895	179856.16	
15	6.1885	2,123	13137.39985	-	0	
20	5.1505	1,100,376	5667488.176	1,101,590	5673741.189	
25	4.7555	32,427	154205.0503	31,973	152049.1596	
30	4.429	52,453	232313.1295	51,759	229241.9372	
35	4.17	101,801	424509.2405	101,211	422050.3328	
40	3.9775	-	0	-	0	
45	3.8535	1,450	5586.686888	1,450	5586.686888	
50	3.7965	38,540	146316.0334	38,540	146316.0334	
55	3.808	813,675	3098472.72	795,828	3030514.168	
60	3.8865	-	0	-	0	
65	4.032	-	0	-	0	
70	4.246	-	0	-	0	
static factors	1.894		1265.192			
	Stanislaus Total (g)	2,168,540	9937005.06	2,146,247	9839645.246	
	Stanislaus Dif (g)				97359.81434	

- Total NOX (g)
- Total NOX (lbs)
- Total NOX (t)
- Dif NOX (g)
- Dif NOX (lbs)
- Dif NOX (t)

Annual Dif NOX(t)

2020 PM10

County	Stanislaus					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)		0.554	2.44	1.35176	2.44	1.35176
10	0.355	25,697	9122.460134	23,895	8482.654017	
15	0.273	2,123	579.5443418	-	0	
20	0.225	1,100,376	247584.6694	1,101,590	247857.8327	
25	0.207	32,427	6712.321609	31,973	6618.478821	
30	0.197	52,453	10333.18729	51,759	10196.58199	
35	0.194	101,801	19749.35076	101,211	19634.95553	
40	0.198	-	0	-	0	
45	0.208	1,450	301.5520624	1,450	301.5520624	
50	0.226	38,540	8709.975913	38,540	8709.975913	
55	0.251	813,675	204232.3143	795,828	199752.9034	
60	0.283	-	0	-	0	
65	0.321	-	0	-	0	
70	0.367	-	0	-	0	
static factors	0.003		2.004			
	Stanislaus Total (g)	2,168,540	507328.7315	2,146,247	501556.2862	
	Stanislaus Dif (g)				5772.445315	

- Total PM10 (g)
- Total PM10 (lbs)
- Total PM10 (t)
- Dif PM10 (g)
- Dif PM10 (lbs)
- Dif PM10 (t)
  
- Annual Dif PM10(t)

2020 CO2e

County	Stanislaus					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6477.035	2.44	15803.9654	2.44	15803.9654	
10	3150.802	25,697	80966382.07	23,895	75287783.78	
15	2581.076	2,123	5479296.673	-	0	
20	2169.091	1,100,376	2386816347	1,101,590	2389449752	
25	2028	32,427	65761295.76	31,973	64841908.45	
30	1909.502	52,453	100158587.8	51,759	98834485.8	
35	1813.303	101,801	184595654.5	101,211	183526411.2	
40	1739.276	-	0	-	0	
45	1687.329	1,450	2446238.173	1,450	2446238.173	
50	1657.482	38,540	63878886.27	38,540	63878886.27	
55	1649.7125	813,675	1342329091	795,828	1312887895	
60	1664.136	-	0	-	0	
65	1700.928	-	0	-	0	
70	1760.34	-	0	-	0	
static factors	39.2575		26224.01			
	Stanislaus Total (g)	2,168,540	4232473807	2,146,247	4191169165	
	Stanislaus Dif (g)				41304642.22	

- Total CO2e (g)
- Total CO2e (lbs)
- Total CO2e (t)
- Dif CO2e (g)
- Dif CO2e (lbs)
- Dif CO2e (t)
  
- Annual Dif CO2e(t)

2020 NOX

County	Tulare		
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo
Idle (g/hr)	118.791	2.44	289.85004
10	8.041	-	0
15	6.0105	-	0
20	4.9965	-	0
25	4.6055	-	0
30	4.281	67,486	288907.1683
35	4.023	-	0
40	3.8315	-	0
45	3.707	-	0
50	3.649	-	0
55	3.657	574,883	2102348.944
60	3.7325	-	0
65	3.874	-	0
70	4.0825	-	0
static factors	2.206		114.712
	Tulare Total (g)	642,369	2391660.674
	Tulare Dif (g)		

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)

Annual Dif NOX(t)

2020 PM10

County	Tulare		
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo
Idle (g/hr)	0.514	2.44	1.25416
10	0.331	-	0
15	0.258	-	0
20	0.214	-	0
25	0.199	-	0
30	0.19	67,486	12822.32235
35	0.187	-	0
40	0.191	-	0
45	0.202	-	0
50	0.219	-	0
55	0.242	574,883	139121.806
60	0.273	-	0
65	0.309	-	0
70	0.352	-	0
static factors	0.004		0.208
	Tulare Total (g)	642,369	151945.5905
	Tulare Dif (g)		

- Total PM10 (g)
- Total PM10 (lbs)
- Total PM10 (t)
- Dif PM10 (g)
- Dif PM10 (lbs)
- Dif PM10 (t)

Annual Dif PM10(t)

2020 CO2e

County	Tulare		
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo
Idle (g/hr)	6469.389	2.44	15785.30916
10	3149.013	-	0
15	2579.414	-	0
20	2167.576	-	0
25	2026.431	-	0
30	1907.913	67,486	128757239.5
35	1811.765	-	0
40	1737.761	-	0
45	1685.883	-	0
50	1656.067	-	0
55	1648.367	574,883	947618983.2
60	1662.875	-	0
65	1699.753	-	0
70	1759.334	-	0
static factors	41.659		2166.268
	Tulare Total (g)	642,369	1076394174
	Tulare Dif (g)		

- Total CO2e (g)
- Total CO2e (lbs)
- Total CO2e (t)
- Dif CO2e (g)
- Dif CO2e (lbs)
- Dif CO2e (t)

Annual Dif CO2e(t)

\*Based on EMFAC 2007 emission factors (ARB 2006).

2011 NOX

County	Fresno					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	110.297	2.44	269.12468	2.44	269.12468	
10	22.005	-	0	-	0	
15	15.968	-	0	-	0	
20	13.609	-	0	-	0	
25	12.964	-	0	-	0	
30	12.4485	238,533	2969381.808	238,466	2968540.786	
35	12.063	63,303	763624.9372	63,304	763636.2462	
40	11.807	-	0	-	0	
45	11.681	-	0	-	0	
50	11.685	-	0	-	0	
55	11.818	863,415	10203841.77	863,438	10204107.04	
60	12.0815	-	0	-	0	
65	12.4745	-	0	-	0	
70	12.997	-	0	-	0	
static factors	2.2245		88.98			
	Fresno Total (g)	1,165,252	13937206.62	1,165,207	13936553.19	
	Fresno Dif (g)				653.4262948	
	wo CL	w CL				
Total NOX (g)	168386659.7	168310387.1	76272.63982	168310387.1	76272.63982	
Total NOX (lbs)	371229.0393	371060.8869	168.1523872	371060.8869	168.1523872	
Total NOX (t)	185.6145196	185.5304434	0.084076194	185.5304434	0.084076194	
Dif NOX (g)	76272.63982					
Dif NOX (lbs)	168.1523872					
Dif NOX (t)	0.084076194					
Annual Dif NOX(t)	25.22285808					

2011 PM10

County	Fresno					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)						
	1.576	2.44	3.84544	2.44	3.84544	
10	1.387	-	0	-	0	
15	0.933	-	0	-	0	
20	0.673	-	0	-	0	
25	0.577	-	0	-	0	
30	0.506	238,533	120697.8507	238,466	120663.6653	
35	0.461	63,303	29182.71541	63,304	29183.1476	
40	0.442	-	0	-	0	
45	0.449	-	0	-	0	
50	0.481	-	0	-	0	
55	0.538	863,415	464517.4202	863,438	464529.4962	
60	0.621	-	0	-	0	
65	0.73	-	0	-	0	
70	0.865	-	0	-	0	
static factors	0.003	-	0.12			
	Fresno Total (g)	1,165,252	614401.9518	1,165,207	614380.1545	
	Fresno Dif (g)				21.79728817	
	wo CL	w CL				
Total PM10 (g)	7673518.918	7670137.578	3381.339755	7670137.578	3381.339755	
Total PM10 (lbs)	16917.2134	16909.75882	7.454578116	16909.75882	7.454578116	
Total PM10 (t)	8.458606699	8.45487941	0.003727289	8.45487941	0.003727289	
Dif PM10 (g)	3381.339755					
Dif PM10 (lbs)	7.454578116					
Dif PM10 (t)	0.003727289					
Annual Dif PM10(t)	1.118186717					

2011 CO2e

County	Fresno					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6471.603	2.44	15790.71132	2.44	15790.71132	
10	3151.926	-	0	-	0	
15	2580.719	-	0	-	0	
20	2168.182	-	0	-	0	
25	2026.863	-	0	-	0	
30	1908.219	238,533	455173778.7	238,466	455044859.2	
35	1811.969	63,303	114703201	63,304	114704899.7	
40	1737.928	-	0	-	0	
45	1686.035	-	0	-	0	
50	1656.246	-	0	-	0	
55	1648.616	863,415	1423440244	863,438	1423477249	
60	1663.216	-	0	-	0	
65	1700.232	-	0	-	0	
70	1760	-	0	-	0	
static factors	39.269		1570.76			

Fresno Total (g)	1,165,252	1993334585	1,165,207	1993242798
Fresno Dif (g)				91786.70906

	wo CL	w CL			
Total CO2e (g)	20617986814	20609559730	8427084.138	20609559730	8427084.138
Total CO2e (lbs)	45454880.15	45436301.61	18578.54033	45436301.61	18578.54033
Total CO2e (t)	22727.44008	22718.15081	9.289270165	22718.15081	9.289270165
Dif CO2e (g)	8427084.138				
Dif CO2e (lbs)	18578.54033				
Dif CO2e (t)	9.289270165				

Annual Dif CO2e(t) 2786.781049

2011 NOX

County	Kern					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	109.076	2.44	266.14544	2.44	266.14544	
	25.7865	-	0	-	0	
	18.621	-	0	-	0	
	15.9225	868	13827.4432	868	13827.73678	
	15.237	1,858	28313.76087	1,858	28314.06246	
	14.694	5,025	73833.78238	5,025	73834.31651	
	14.295	11,862	169567.5828	11,862	169569.9315	
	14.039	16,910	237405.9443	16,910	237405.7981	
	13.926	51,865	722271.17	51,866	722283.783	
	13.9565	157,749	2201620.954	157,751	2201650.893	
	14.1305	942,703	13320860.32	942,654	13320168.53	
	14.4475	-	0	-	0	
	14.908	-	0	-	0	
	15.511	-	0	-	0	
static factors	1.521		0		0	
	Kern Total (g)	1,188,840	16767967.11	1,188,795	16767321.19	
	Kern Dif (g)				645.9142466	

Total NOX (g)	76272.63982
Total NOX (lbs)	
Total NOX (t)	25.22285808
Dif NOX (g)	
Dif NOX (lbs)	
Dif NOX (t)	

Annual Dif NOX(t)

2011 PM10

County	Kern					
Speed (mph)	Total Em	Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	1.788		2.44	4.36272	2.44	4.36272
10	1.769		-	0	-	0
15	1.178		-	0	-	0
20	0.84		868	729.4741583	868	729.4896462
25	0.715		1,858	1328.630244	1,858	1328.644396
30	0.623		5,025	3130.423739	5,025	3130.446385
35	0.563		11,862	6678.317531	11,862	6678.410035
40	0.536		16,910	9064.00642	16,910	9064.000839
45	0.542		51,865	28110.79809	51,866	28111.28898
50	0.58		157,749	91494.29679	157,751	91495.54101
55	0.651		942,703	613699.4495	942,654	613667.578
60	0.755		-	0	-	0
65	0.891		-	0	-	0
70	1.061		-	0	-	0
static factors	0.002			0		0
Kern Total (g)			1,188,840	754239.7592	1,188,795	754209.762
Kern Dif (g)						29.99722339

Total PM10 (g)	3381.339755
Total PM10 (lbs)	
Total PM10 (t)	1.118186717
Dif PM10 (g)	
Dif PM10 (lbs)	
Dif PM10 (t)	

Annual Dif PM10(t)

2011 CO2e

County	Kern				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	6494.303	2.44	15846.09932	2.44	15846.09932
10	3158.188	-	0	-	0
15	2586.104	-	0	-	0
20	2172.901	868	1886994.2	868	1887034.264
25	2031.679	1,858	3775314.916	1,858	3775355.129
30	1912.988	5,025	9612300.238	5,025	9612369.775
35	1816.61	11,862	21548665.03	11,862	21548963.51
40	1742.421	16,910	29465140.17	16,910	29465122.03
45	1690.385	51,865	87671718.5	51,866	87673249.49
50	1660.444	157,749	261933027.8	157,751	261936589.8
55	1652.663	942,703	1557969852	942,654	1557888941
60	1667.068	-	0	-	0
65	1703.836	-	0	-	0
70	1763.17	-	0	-	0
static factors	30.6275		0		0
	Kern Total (g)	1,188,840	1973878858	1,188,795	1973803471
	Kern Dif (g)				75387.64755

Total CO2e (g)	8427084.138
Total CO2e (lbs)	
Total CO2e (t)	2786.781049
Dif CO2e (g)	
Dif CO2e (lbs)	
Dif CO2e (t)	

Annual Dif CO2e(t)

2011 NOX

County	Kings				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	109.374	2.4	266.87256	2.44	266.87256
10	24.351	-	0	-	0
15	17.6315	-	0	-	0
20	15.0615	20,136	303272.4512	20,148	303453.829
25	14.3885	-	0	-	0
30	13.354	314,552	4200531.071	314,554	4200549.842
35	13.458	-	0	-	0
40	13.2005	-	0	-	0
45	13.082	-	0	-	0
50	13.1015	-	0	-	0
55	13.2605	257,216	3410811.521	257,197	3410556.18
60	13.5575	-	0	-	0
65	13.9935	-	0	-	0
70	14.5675	-	0	-	0
static factors	2.5225		25.225		
	Kings Total (g)	591,904	7914907.14	591,898	7914826.723
	Kings Dif (g)				80.41734196

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)

Annual Dif NOX(t)

2011 PM10

County	Kings					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	1.697	2.4	4.14068	2.44	4.14068	
10	1.634	-	0	-	0	
15	1.091	-	0	-	0	
20	0.781	20,136	15725.9094	20,148	15735.31457	
25	0.666	-	0	-	0	
30	0.582	314,552	183069.4236	314,554	183070.2417	
35	0.527	-	0	-	0	
40	0.503	-	0	-	0	
45	0.509	-	0	-	0	
50	0.546	-	0	-	0	
55	0.612	257,216	157416.1344	257,197	157404.3499	
60	0.709	-	0	-	0	
65	0.835	-	0	-	0	
70	0.992	-	0	-	0	
static factors	0.003		0.03			
	Kings Total (g)	591,904	356215.6382	591,898	356214.0469	
	Kings Dif (g)				1.59126906	

- Total PM10 (g)
- Total PM10 (lbs)
- Total PM10 (t)
- Dif PM10 (g)
- Dif PM10 (lbs)
- Dif PM10 (t)

Annual Dif PM10(t)

2011 CO2e

County	Kings					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	6473.152	2.4	15794.49088	2.44	15794.49088	
10	3153.085	-	0	-	0	
15	2581.402	-	0	-	0	
20	2168.635	20,136	43666783	20,148	43692898.75	
25	2027.282	-	0	-	0	
30	1908.617	314,552	600359818.1	314,554	600362500.9	
35	1812.342	-	0	-	0	
40	1738.273	-	0	-	0	
45	1686.371	-	0	-	0	
50	1656.574	-	0	-	0	
55	1648.934	257,216	424132052.7	257,197	424100301.2	
60	1663.544	-	0	-	0	
65	1700.585	-	0	-	0	
70	1760.368	-	0	-	0	
static factors	32.5215		325.215			
	Kings Total (g)	591,904	1068174773	591,898	1068171495	
	Kings Dif (g)				3278.126512	

Total CO2e (g)

Total CO2e (lbs)

Total CO2e (t)

Dif CO2e (g)

Dif CO2e (lbs)

Dif CO2e (t)

Annual Dif CO2e(t)

2011 NOX

County	Madera					
Speed (mph)	Total Em	Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)		109.909	2.44	268.17796	2.44	268.17796
	10	23.917	4	104.5738298	4	95.51134365
	15	17.333	2,289	39669.12644	2,290	39697.77921
	20	14.7905	1,214	17959.78892	1,215	17972.76491
	25	14.1115	14,853	209595.885	14,860	209698.4885
	30	13.571	24,334	330233.708	24,320	330049.6361
	35	13.1685	22,338	294161.2227	22,302	293684.0629
	40	12.9045	123,638	1595492.518	123,370	1592030.051
	45	12.7785	77,622	991891.3792	66,707	852419.3077
	50	12.941	302,068	3909060.697	312,903	4049280.641
	55	12.942	1,956,192	25317036.24	1,956,566	25321870.94
	60	13.231	-	0	-	0
	65	13.6585	-	0	-	0
	70	14.224	-	0	-	0
static factors		3.486		55.776		
	Madera Total (g)		2,524,552	32705529.1	2,524,538	32707067.36
	Madera Dif (g)					-1538.267624

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)

Annual Dif NOX(t)

2011 PM10

County	Madera				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	1.642	2.44	4.00648	2.44	4.00648
10	1.638	4	7.161932232	4	6.5412711
15	1.095	2,289	2506.06897	2,290	2507.879088
20	0.784	1,214	951.9944906	1,215	952.6823087
25	0.669	14,853	9936.551543	14,860	9941.415782
30	0.585	24,334	14235.26042	24,320	14227.3257
35	0.53	22,338	11839.2716	22,302	11820.06708
40	0.507	123,638	62684.69966	123,370	62548.66408
45	0.513	77,622	39820.03189	66,707	34220.8479
50	0.55	302,068	166137.3451	312,903	172096.774
55	0.617	1,956,192	1206970.434	1,956,566	1207200.925
60	0.714	-	0	-	0
65	0.842	-	0	-	0
70	1	-	0	-	0
static factors	0.004		0.064		
	Madera Total (g)	2,524,552	1515092.891	2,524,538	1515527.129
	Madera Dif (g)				-434.2382688

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2011 CO2e

County	Madera				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	6478.42	2.44	15807.3448	2.44	15807.3448
10	3154.49	4	13792.57851	4	12597.29809
15	2582.684	2,289	5910853.179	2,290	5915122.552
20	2169.783	1,214	2634721.252	1,215	2636624.844
25	2028.449	14,853	30128233.24	14,860	30142981.92
30	1909.765	24,334	46471798.5	24,320	46445895.17
35	1813.465	22,338	40509631.45	22,302	40443920.65
40	1739.364	123,638	215052287.8	123,370	214585590.8
45	1687.428	77,622	130981358.2	66,707	112563775.7
50	1657.594	302,068	500705939	312,903	518666509.1
55	1649.912	1,956,192	3227544576	1,956,566	3228160928
60	1664.469	-	0	-	0
65	1701.433	-	0	-	0
70	1761.115	-	0	-	0
static factors	59.056		944.896		
	Madera Total (g)	2,524,552	4199969944	2,524,538	4199589754
	Madera Dif (g)				380189.8662

Total CO2e (g)  
 Total CO2e (lbs)  
 Total CO2e (t)  
 Dif CO2e (g)  
 Dif CO2e (lbs)  
 Dif CO2e (t)

Annual Dif CO2e(t)

2011 NOX

County	Merced					
Speed (mph)	Total Em	Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)						
	109.421		2.44	266.98724	2.44	266.98724
	25.121		-	0	-	0
	18.18		808	14691.28896	807	14677.83492
	15.534		987	15338.00581	988	15349.22736
	14.846		7,370	109415.4263	7,321	108690.4366
	14.2995		7,610	108813.9216	7,602	108706.635
	13.896		22,433	311731.6616	22,487	312481.9318
	13.6345		12,555	171180.789	12,571	171403.1909
	13.515		145,977	1972880.149	149,847	2025188.336
	13.538		23,325	315778.7665	23,224	314403.5721
	13.703		743,127	10183071.78	740,005	10140282.48
	14.01		-	0	-	0
	14.459		-	0	-	0
	15.0355		-	0	-	0
static factors	2.599			109.158		
	Merced Total (g)		964,193	13203277.94	964,853	13211450.63
	Merced Dif (g)					-8172.694152

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)

Annual Dif NOX(t)

2011 PM10

County	Merced					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	1.701	2.44	4.15044	2.44	4.15044	
10	1.796	-	0	-	0	
15	1.196	808	966.4896368	807	965.6045418	
20	0.853	987	842.2376052	988	842.8538004	
25	0.726	7,370	5350.63987	7,321	5315.186379	
30	0.632	7,610	4809.28693	7,602	4804.545146	
35	0.572	22,433	12831.78687	22,487	12862.67019	
40	0.544	12,555	6829.905694	12,571	6838.779262	
45	0.55	145,977	80287.39047	149,847	82416.0995	
50	0.59	23,325	13761.96427	23,224	13702.03188	
55	0.662	743,127	491950.1949	740,005	489883.0185	
60	0.768	-	0	-	0	
65	0.907	-	0	-	0	
70	1.079	-	0	-	0	
static factors	0.003		0.126			
	Merced Total (g)	964,193	617634.1727	964,853	617634.9396	
	Merced Dif (g)				-0.76690883	

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2011 CO2e

County	Merced				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	6477.759	2.44	15805.73196	2.44	15805.73196
10	3154.868	-	0	-	0
15	2582.756	808	2087129.522	807	2085218.164
20	2169.743	987	2142367.114	988	2143934.506
25	2028.382	7,370	14949230.85	7,321	14850176.83
30	1909.695	7,610	14532074.69	7,602	14517746.59
35	1813.359	22,433	40679433.94	22,487	40777340.49
40	1739.263	12,555	21836401.23	12,571	21864771.57
45	1687.312	145,977	246308868	149,847	252839406.7
50	1657.504	23,325	38661882.74	23,224	38493512.96
55	1649.829	743,127	1226032777	740,005	1220880983
60	1664.414	-	0	-	0
65	1701.411	-	0	-	0
70	1761.133	-	0	-	0
static factors	39.712		1667.904		
	Merced Total (g)	964,193	1607247638	964,853	1608468896
	Merced Dif (g)				-1221257.792

- Total CO2e (g)
- Total CO2e (lbs)
- Total CO2e (t)
- Dif CO2e (g)
- Dif CO2e (lbs)
- Dif CO2e (t)

Annual Dif CO2e(t)

2011 NOX

County	San Joaquin				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	108.44	2.44	264.5936	2.44	264.5936
10	25.7915	-	0	-	0
15	18.64	-	0	-	0
20	15.9525	-	0	-	0
25	15.2735	-	0	-	0
30	14.7375	342,045	5040895.08	342,058	5041072.597
35	14.344	-	0	-	0
40	14.093	1,192	16795.22266	1,192	16795.22266
45	13.9845	1,058	14799.12625	1,058	14799.12625
50	14.019	-	0	-	0
55	14.196	3,080,650	43732910.96	3,078,023	43695615.62
60	14.5155	-	0	-	0
65	14.9775	-	0	-	0
70	15.583	-	0	-	0
static factors	3.2855		111.707		
	SanJoaquin Total (g)	3,424,946	48805776.69	3,422,331	48768547.16
	SanJoaquin Dif (g)				37229.52774

Total NOX (g)

Total NOX (lbs)

Total NOX (t)

Dif NOX (g)

Dif NOX (lbs)

Dif NOX (t)

Annual Dif NOX(t)

2011 PM10

County	San Joaquin					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)						
		1.795	2.44	4.3798	2.44	4.3798
10		1.739	-	0	-	0
15		1.158	-	0	-	0
20		0.826	-	0	-	0
25		0.703	-	0	-	0
30		0.613	342,045	209673.8717	342,058	209681.2554
35		0.554	-	0	-	0
40		0.528	1,192	629.2398753	1,192	629.2398753
45		0.534	1,058	565.1066123	1,058	565.1066123
50		0.571	-	0	-	0
55		0.641	3,080,650	1974696.811	3,078,023	1973012.793
60		0.743	-	0	-	0
65		0.877	-	0	-	0
70		1.043	-	0	-	0
static factors		0.004		0.136		
	SanJoaquin Total (g)	3,424,946	2185569.545	3,422,331	2183892.775	
	SanJoaquin Dif (g)				1676.769691	

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2011 CO2e

County	San Joaquin				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	6463.644	2.44	15771.29136	2.44	15771.29136
10	3151.105	-	0	-	0
15	2579.4155	-	0	-	0
20	2166.76	-	0	-	0
25	2025.316	-	0	-	0
30	1906.632	342,045	652154834.1	342,058	652177800
35	1810.374	-	0	-	0
40	1736.3705	1,192	2069305.979	1,192	2069305.979
45	1684.523	1,058	1782649.974	1,058	1782649.974
50	1654.793	-	0	-	0
55	1647.25	3,080,650	5074601126	3,078,023	5070273516
60	1661.955	-	0	-	0
65	1699.134	-	0	-	0
70	1759.178	-	0	-	0
static factors	47.314		1608.676		
	SanJoaquin Total (g)	3,424,946	5730625296	3,422,331	5726319043
	SanJoaquin Dif (g)				4306252.341

Total CO2e (g)

Total CO2e (lbs)

Total CO2e (t)

Dif CO2e (g)

Dif CO2e (lbs)

Dif CO2e (t)

Annual Dif CO2e(t)

2011 NOX

County	Stanislaus				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	104.124	2.44	254.06256	2.44	254.06256
	29.2965	19,929	583862.0076	19,780	579477.1455
	15 21.11	13,099	276513.641	13,026	274988.1729
	20 18.174	786,988	14302714.15	787,029	14303470.47
	25 17.501	35,191	615880.276	35,098	614242.625
	30 16.979	52,348	888822.6555	52,142	885313.0628
	35 16.6075	56,237	933963.6568	56,222	933701.4319
	40 16.387	25,417	416511.7556	25,417	416511.7556
	45 16.3175	1,222	19947.91867	1,222	19947.91867
	50 16.399	32,498	532930.8605	32,498	532930.8605
	55 16.631	633,957	10543340.82	631,740	10506471.14
	60 17.014	-	0	-	0
	65 17.548	-	0	-	0
	70 18.232	-	0	-	0
static factors	3.4475		158.585		
	Stanislaus Total (g)	1,656,887	29114900.39	1,654,174	29067308.64
	Stanislaus Dif (g)				47591.74146

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)

Annual Dif NOX(t)

2011 PM10

County	Stanislaus				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	2.214	2.44	5.40216	2.44	5.40216
10	2.007	19,929	39998.32912	19,780	39697.93767
15	1.335	13,099	17486.76981	13,026	17390.29895
20	0.951	786,988	748425.2863	787,029	748464.8628
25	0.807	35,191	28399.2562	35,098	28323.74141
30	0.699	52,348	36591.49751	52,142	36447.01283
35	0.625	56,237	35148.414	56,222	35138.54553
40	0.587	25,417	14919.89995	25,417	14919.89995
45	0.583	1,222	712.7094581	1,222	712.7094581
50	0.615	32,498	19986.12593	32,498	19986.12593
55	0.682	633,957	432358.7541	631,740	430846.8112
60	0.783	-	0	-	0
65	0.92	-	0	-	0
70	1.091	-	0	-	0
static factors	0.004		0.184		
	Stanislaus Total (g)	1,656,887	1374032.629	1,654,174	1371933.348
	Stanislaus Dif (g)				2099.280649

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2011 CO2e

County	Stanislaus				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	6457.595	2.44	15756.5318	2.44	15756.5318
10	3148.7195	19,929	62752126.99	19,780	62280852.24
15	2577.661	13,099	33764018.4	13,026	33577749.35
20	2165.343	786,988	1704098270	787,029	1704188382
25	2023.899	35,191	71223328.65	35,098	71033942.89
30	1905.279	52,348	99738214.28	52,142	99344389.36
35	1809.066	56,237	101737281.2	56,222	101708716.8
40	1738.0555	25,417	44176514.78	25,417	44176514.78
45	1683.3145	1,222	2057828.757	1,222	2057828.757
50	1653.636	32,498	53739475.36	32,498	53739475.36
55	1646.095	633,957	1043553641	631,740	1039904372
60	1660.834	-	0	-	0
65	1698.073	-	0	-	0
70	1758.1725	-	0	-	0
static factors	62.8475		2890.985		
	Stanislaus Total (g)	1,656,887	3216859347	1,654,174	3212027980
	Stanislaus Dif (g)				4831366.88

- Total CO2e (g)
- Total CO2e (lbs)
- Total CO2e (t)
- Dif CO2e (g)
- Dif CO2e (lbs)
- Dif CO2e (t)

Annual Dif CO2e(t)

2011 NOX

County	Tulare					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	109.705	2.44	267.6802	2.44	267.6802	
10	22.1275	-	0	-	0	
15	16.066	-	0	-	0	
20	13.704	-	0	-	0	
25	13.0625	-	0	-	0	
30	12.537	56,043	702611.7527	56,042	702601.7844	
35	7.168	-	0	-	0	
40	11.9165	-	0	-	0	
45	11.794	-	0	-	0	
50	11.8005	-	0	-	0	
55	11.938	438,443	5234131.888	438,469	5234442.706	
60	12.2045	-	0	-	0	
65	12.6015	-	0	-	0	
70	13.128	-	0	-	0	
static factors	3.792		83.424			
	Tulare Total (g)	494,486	5937094.745	494,511	5937312.171	
	Tulare Dif (g)				-217.4254847	

Total NOX (g)  
 Total NOX (lbs)  
 Total NOX (t)  
 Dif NOX (g)  
 Dif NOX (lbs)  
 Dif NOX (t)

Annual Dif NOX(t)

2011 PM10

County	Tulare					
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w	
Idle (g/hr)	1.602	2.44	3.90888	2.44	3.90888	
10	1.336	-	0	-	0	
15	0.9	-	0	-	0	
20	0.65	-	0	-	0	
25	0.558	-	0	-	0	
30	0.49	56,043	27461.09586	56,042	27460.70626	
35	0.447	-	0	-	0	
40	0.429	-	0	-	0	
45	0.435	-	0	-	0	
50	0.466	-	0	-	0	
55	0.522	438,443	228867.2178	438,469	228880.8086	
60	0.602	-	0	-	0	
65	0.707	-	0	-	0	
70	0.837	-	0	-	0	
static factors	0.005		0.11			
	Tulare Total (g)	494,486	256332.3325	494,511	256345.4237	
	Tulare Dif (g)				-13.09118869	

Total PM10 (g)  
 Total PM10 (lbs)  
 Total PM10 (t)  
 Dif PM10 (g)  
 Dif PM10 (lbs)  
 Dif PM10 (t)

Annual Dif PM10(t)

2011 CO2e

County	Tulare				
Speed (mph)	Total Em Fac	Mileage wo CL	Emissions wo	Mileage w CL	Emissions w
Idle (g/hr)	6450.564	2.44	15739.37616	2.44	15739.37616
10	3146.883	-	0	-	0
15	2576.057	-	0	-	0
20	2163.918	-	0	-	0
25	2022.445	-	0	-	0
30	1903.827	56,043	106696277.1	56,042	106694763.3
35	1807.661	-	0	-	0
40	1733.761	-	0	-	0
45	1681.982	-	0	-	0
50	1652.34	-	0	-	0
55	1644.873	438,443	721182963.8	438,469	721225789.7
60	1659.659	-	0	-	0
65	1696.971	-	0	-	0
70	1757.213	-	0	-	0
static factors	63.2965		1392.523		
	Tulare Total (g)	494,486	827896372.7	494,511	827936292.3
	Tulare Dif (g)				-39919.63967

Total CO2e (g)  
 Total CO2e (lbs)  
 Total CO2e (t)  
 Dif CO2e (g)  
 Dif CO2e (lbs)  
 Dif CO2e (t)

Annual Dif CO2e(t)

\*Based on EMFAC 2007 emission factors (ARB 2006).

TOTAL DAILY TRUCK VMT BY COUNTY WITHOUT CROWS LANDING - 2020									
Congested Speed (mph)	Stanislaus	Merced	Fresno	Madera	Kings	Tulare	San Joaquin	Kern	Total
0-10	25,697	-	-	6	-	-	-	-	25,703
10.1 - 15.0	2,123	917	-	3,648	22,119	-	-	-	28,807
15.1 - 20.0	1,100,376	1,317	-	9,470	10,575	-	-	1,056	1,122,794
20.1 - 25.0	32,427	9,692	2,459	15,116	25,533	-	452	2,303	87,983
25.1 - 30.0	52,453	8,954	342,449	20,827	357,808	67,486	415,795	6,042	1,271,813
30.1 - 35.0	101,801	27,591	64,709	81,940	-	-	-	14,283	290,324
35.1 - 40.0	-	15,871	-	98,644	-	-	1,355	21,402	137,273
40.1 - 45.0	1,450	210,666	-	80,749	-	-	1,204	66,288	360,356
45.1 - 50.0	38,540	27,947	-	375,829	-	-	-	198,391	640,707
50.1 - 55.0	813,675	889,034	1,063,049	2,518,088	336,710	574,883	4,240,502	1,294,376	11,730,319
55.1 - 60.0	-	-	-	-	-	-	-	-	-
60.1 - 65.0	-	-	-	-	-	-	-	-	-
65.1 - 75.0	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>2,168,540</b>	<b>1,191,989</b>	<b>1,472,667</b>	<b>3,204,317</b>	<b>752,746</b>	<b>642,369</b>	<b>4,659,309</b>	<b>1,604,141</b>	<b>15,696,079</b>

Origin	Destination	Daily Trips
San Joaquin	Port of Oakland	53
Stanislaus	Port of Oakland	668
Merced	Port of Oakland	33
Fresno	Port of Oakland	96
Madera	Port of Oakland	36
Kings	Port of Oakland	25
Tulare	Port of Oakland	52
Port of Oakland	San Joaquin	53
Port of Oakland	Stanislaus	668
Port of Oakland	Merced	33
Port of Oakland	Fresno	96
Port of Oakland	Madera	36
Port of Oakland	Kings	25
Port of Oakland	Tulare	52
<b>Total Diverted</b>		<b>1926</b>

TOTAL DAILY TRUCK VMT BY COUNTY WITH CROWS LANDING - 2020									
Congested Speed (mph)	Stanislaus	Merced	Fresno	Madera	Kings	Tulare	San Joaquin	Kern	Total
0-10	23,895	-	-	6	-	-	-	-	23,901
10.1 - 15.0	-	904	-	3,617	22,437	-	-	-	26,958
15.1 - 20.0	1,101,590	1,268	-	4,870	10,730	-	-	1,056	1,119,514
20.1 - 25.0	31,973	8,648	2,290	19,692	25,834	-	452	2,303	91,192
25.1 - 30.0	51,759	9,677	407,447	97,783	357,835	67,488	415,872	6,042	1,413,903
30.1 - 35.0	101,211	27,954	-	25,973	-	-	-	14,284	169,423
35.1 - 40.0	-	20,656	-	86,144	-	-	1,355	21,401	129,557
40.1 - 45.0	1,450	228,130	-	91,426	-	-	1,204	66,288	388,498
45.1 - 50.0	38,540	25,278	-	350,346	-	-	-	198,391	612,555
50.1 - 55.0	795,828	875,775	1,063,313	2,525,104	335,176	575,628	4,213,125	1,292,879	11,676,828
55.1 - 60.0	-	-	-	-	-	-	-	-	-
60.1 - 65.0	-	-	-	-	-	-	-	-	-
65.1 - 75.0	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>2,146,247</b>	<b>1,198,291</b>	<b>1,473,050</b>	<b>3,204,961</b>	<b>752,011</b>	<b>643,116</b>	<b>4,632,009</b>	<b>1,602,643</b>	<b>15,652,328</b>

\*Based on modeling performed by Cambridge Systematics, Inc., 2008 for the proposed project.  
(Cambridge Systematics, Inc. 2008)

TOTAL DAILY TRUCK VMT BY COUNTY WITHOUT CROWS LANDING - 2011									
Congested Speed (mph)	Stanislaus	Merced	Fresno	Madera	Kings	Tulare	San Joaquin	Kern	Total
0-10	19,929	-	-	4	-	-	-	-	19,934
10.1 - 15.0	13,099	808	-	2,289	-	-	-	-	16,195
15.1 - 20.0	786,988	987	-	1,214	20,136	-	-	868	810,193
20.1 - 25.0	35,191	7,370	-	14,853	-	-	-	1,858	59,272
25.1 - 30.0	52,348	7,610	238,533	24,334	314,552	56,043	342,045	5,025	1,040,491
30.1 - 35.0	56,237	22,433	63,303	22,338	-	-	-	11,862	176,174
35.1 - 40.0	25,417	12,555	-	123,638	-	-	1,192	16,910	179,713
40.1 - 45.0	1,222	145,977	-	77,622	-	-	1,058	51,865	277,745
45.1 - 50.0	32,498	23,325	-	302,068	-	-	-	157,749	515,640
50.1 - 55.0	633,957	743,127	863,415	1,956,192	257,216	438,443	3,080,650	942,703	8,915,703
55.1 - 60.0	-	-	-	-	-	-	-	-	-
60.1 - 65.0	-	-	-	-	-	-	-	-	-
65.1 - 75.0	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1,656,887</b>	<b>964,193</b>	<b>1,165,252</b>	<b>2,524,552</b>	<b>591,904</b>	<b>494,486</b>	<b>3,424,946</b>	<b>1,188,840</b>	<b>12,011,060</b>

TOTAL DAILY TRUCK VMT BY COUNTY WITH CROWS LANDING - 2011									
Congested Speed (mph)	Stanislaus	Merced	Fresno	Madera	Kings	Tulare	San Joaquin	Kern	Total
0-10	19,780	-	-	4	-	-	-	-	19,784
10.1 - 15.0	13,026	807	-	2,290	-	-	-	-	16,124
15.1 - 20.0	787,029	988	-	1,215	20,148	-	-	868	810,249
20.1 - 25.0	35,098	7,321	-	14,860	-	-	-	1,858	59,137
25.1 - 30.0	52,142	7,602	238,466	24,320	314,554	56,042	342,058	5,025	1,040,208
30.1 - 35.0	56,222	22,487	63,304	22,302	-	-	-	11,862	176,177
35.1 - 40.0	25,417	12,571	-	123,370	-	-	1,192	16,910	179,461
40.1 - 45.0	1,222	149,847	-	66,707	-	-	1,058	51,866	270,701
45.1 - 50.0	32,498	23,224	-	312,903	-	-	-	157,751	526,376
50.1 - 55.0	631,740	740,005	863,438	1,956,566	257,197	438,469	3,078,023	942,654	8,908,090
55.1 - 60.0	-	-	-	-	-	-	-	-	-
60.1 - 65.0	-	-	-	-	-	-	-	-	-
65.1 - 75.0	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1,654,174</b>	<b>964,853</b>	<b>1,165,207</b>	<b>2,524,538</b>	<b>591,898</b>	<b>494,511</b>	<b>3,422,331</b>	<b>1,188,795</b>	<b>12,006,307</b>

Origin	Destination	Daily Trips
San Joaquin	Port of Oakland	17
Stanislaus	Port of Oakland	23
Merced	Port of Oakland	21
Fresno	Port of Oakland	20
Madera	Port of Oakland	8
Kings	Port of Oakland	5
Tulare	Port of Oakland	11
Kern	Port of Oakland	0
Port of Oakland	San Joaquin	17
Port of Oakland	Stanislaus	23
Port of Oakland	Merced	21
Port of Oakland	Fresno	20
Port of Oakland	Madera	8
Port of Oakland	Kings	5
Port of Oakland	Tulare	11
<b>Total Diverted</b>		<b>210</b>

\*Based on modeling performed by Cambridge Systematics, Inc., 2008 for the proposed project.  
(Cambridge Systematics, Inc. 2008)

A4

EMFAC Emission Factors Per County

EMFAC 2007 HDDTruck in Fresno County

Model Year	Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)		Start Emission Rate @ 240 min (g/trip)					Hot Soak @ 20 min (g/trip)	Evaporative Running Loss @ 20 min(g/mi)
			ROG	Nox	CH4	CO2	PM10	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG
2011	0	40	11.666	110.297	0.542	6460.221	1.574	0.000	0.000	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	11.666	110.297	0.542	6460.221	1.578	0.000	0.000	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	10	40	5.201	24.044	0.242	3146.844	1.323	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	5.206	19.966	0.242	3146.844	1.323	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	15	40	2.507	17.451	0.117	2578.262	0.869	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	2.510	14.485	0.117	2578.262	0.869	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	20	40	1.350	14.875	0.064	2166.838	0.609	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	1.352	12.343	0.064	2166.838	0.609	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	25	40	1.091	14.171	0.052	2025.771	0.513	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	1.093	11.757	0.052	2025.771	0.513	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	30	40	0.886	13.609	0.042	1907.337	0.442	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.887	11.288	0.042	1907.337	0.442	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	35	40	0.734	13.188	0.035	1811.234	0.397	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.735	10.938	0.035	1811.234	0.397	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	40	40	0.634	12.909	0.030	1737.298	0.378	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.635	10.705	0.030	1737.298	0.378	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	45	40	0.585	12.772	0.028	1685.447	0.385	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.586	10.590	0.028	1685.447	0.385	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	50	40	0.588	12.777	0.028	1655.658	0.417	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.589	10.593	0.028	1655.658	0.417	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	55	40	0.642	12.923	0.031	1647.965	0.474	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.643	10.713	0.031	1647.965	0.474	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	60	40	0.747	13.211	0.036	1662.460	0.557	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.748	10.952	0.036	1662.460	0.557	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	65	40	0.903	13.641	0.043	1699.329	0.666	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	0.904	11.308	0.043	1699.329	0.666	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
	70	40	1.110	14.212	0.052	1758.908	0.801	0.036	0.028	1.820	2.484	0.108	37.127	0.003	0.010	0.001	
		85	1.110	11.782	0.052	1758.908	0.801	0.036	0.028	1.633	1.965	0.096	37.127	0.003	0.021	0.001	
2020	0	40	8.520	118.922	0.396	6467.291	0.510	0.000	0.000	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	8.520	118.922	0.396	6467.291	0.510	0.000	0.000	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	10	40	2.153	9.290	0.101	3148.458	0.287	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	2.156	7.711	0.101	3148.458	0.287	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	15	40	1.032	6.948	0.049	2579.797	0.209	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	1.034	5.764	0.049	2579.797	0.209	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	20	40	0.588	5.773	0.028	2168.254	0.161	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.589	4.786	0.028	2168.254	0.161	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	25	40	0.496	5.317	0.024	2027.238	0.145	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.497	4.406	0.024	2027.238	0.145	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	30	40	0.420	4.938	0.020	1908.803	0.135	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.421	4.091	0.020	1908.803	0.135	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	35	40	0.359	4.637	0.018	1812.672	0.132	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.360	3.840	0.018	1812.672	0.132	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	40	40	0.313	4.413	0.015	1738.695	0.137	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.314	3.653	0.015	1738.695	0.137	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	45	40	0.282	4.267	0.014	1686.798	0.148	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.282	3.531	0.014	1686.798	0.148	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	50	40	0.264	4.198	0.013	1656.961	0.166	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.265	3.473	0.013	1656.961	0.166	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	55	40	0.262	4.207	0.013	1649.213	0.192	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.262	3.480	0.013	1649.213	0.192	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	60	40	0.273	4.293	0.014	1663.639	0.224	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.274	3.551	0.014	1663.639	0.224	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	65	40	0.299	4.456	0.015	1700.408	0.263	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.300	3.686	0.015	1700.408	0.263	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	
	70	40	0.340	4.697	0.017	1759.829	0.310	0.036	0.028	0.928	1.723	0.052	33.250	0.003	0.004	0.000	
		85	0.340	3.686	0.017	1759.829	0.310	0.036	0.028	0.852	1.368	0.048	33.250	0.003	0.006	0.000	

EMFAC 2007 HHDTruck in Kern County

Model Year	Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)		Start Emission Rate @ 240 min (g/trip)					Hot Soak @ 20 min (g/trip)	Evaporative Running Loss @ 20 min(g/mi)
			ROG	Nox	CH4	CO2	PM10	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG
2011	0	40	12.299	109.076	0.571	6482.312	1.788	0.000	0.000	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	12.299	109.076	0.571	6482.312	1.788	0.000	0.000	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	10	40	6.455	28.171	0.300	3151.888	1.705	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	6.460	23.402	0.300	3151.888	1.705	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	15	40	3.104	20.346	0.145	2583.059	1.114	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	3.108	16.896	0.145	2583.059	1.114	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	20	40	1.658	17.399	0.078	2171.263	0.776	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	1.661	14.446	0.078	2171.263	0.776	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	25	40	1.334	16.651	0.063	2030.356	0.651	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	1.336	13.823	0.063	2030.356	0.651	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	30	40	1.079	16.058	0.051	1911.917	0.559	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	1.081	13.330	0.051	1911.917	0.559	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	35	40	0.891	15.623	0.042	1815.728	0.499	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	0.892	12.967	0.042	1815.728	0.499	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	40	40	0.769	15.344	0.036	1741.665	0.472	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	0.770	12.734	0.036	1741.665	0.472	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	45	40	0.712	15.221	0.034	1689.671	0.478	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	0.713	12.631	0.034	1689.671	0.478	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	50	40	0.722	15.255	0.034	1659.730	0.516	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	0.723	12.658	0.034	1659.730	0.516	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	55	40	0.798	15.445	0.038	1651.865	0.587	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	0.798	12.816	0.038	1651.865	0.587	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	60	40	0.937	15.792	0.044	1666.144	0.691	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	0.938	13.103	0.044	1666.144	0.691	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	65	40	1.143	16.295	0.054	1702.702	0.827	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	1.144	13.521	0.054	1702.702	0.827	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	70	40	1.415	16.954	0.066	1761.784	0.997	0.036	0.028	1.283	1.699	0.075	22.490	0.002	0.006	0.001	
		85	1.416	14.068	0.066	1761.784	0.997	0.036	0.028	1.209	1.343	0.700	22.490	0.002	0.011	0.001	
	2020	0	40	8.768	118.114	0.407	6460.917	0.622	0.000	0.000	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	8.768	118.114	0.407	6490.917	0.622	0.000	0.000	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		10	40	2.397	9.969	0.112	3147.003	0.363	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	2.401	8.274	0.112	3147.003	0.363	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		15	40	1.147	7.416	0.054	2578.413	0.257	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	1.149	6.151	0.054	2578.413	0.257	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		20	40	0.647	6.187	0.031	2166.977	0.194	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	0.648	5.129	0.031	2166.977	0.194	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		25	40	0.542	5.732	0.026	2025.915	0.172	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	0.546	4.750	0.026	2025.915	0.172	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		30	40	0.455	5.355	0.022	1907.481	0.158	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	0.456	4.436	0.022	1907.481	0.158	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		35	40	0.387	5.058	0.019	1811.376	0.152	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	0.388	4.188	0.019	1811.376	0.152	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		40	40	0.337	4.839	0.017	1737.436	0.156	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	0.337	4.006	0.017	1737.436	0.156	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		45	40	0.304	4.699	0.015	1685.580	0.167	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	0.305	3.889	0.015	1685.580	0.167	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
		50	40	0.289	4.638	0.014	1655.786	0.188	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000
			85	0.289	3.838	0.014	1655.786	0.188	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000
55		40	0.291	4.656	0.014	1648.088	0.217	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000	
		85	0.291	3.852	0.014	1648.088	0.217	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000	
60		40	0.310	4.752	0.015	1662.576	0.254	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000	
		85	0.311	3.932	0.015	1662.576	0.254	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000	
65		40	0.347	4.928	0.017	1699.435	0.300	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000	
		85	0.348	4.077	0.017	1699.435	0.300	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000	
70		40	0.402	5.182	0.020	1758.998	0.354	0.036	0.028	0.770	1.447	0.043	28.040	0.003	0.003	0.000	
		85	0.402	4.288	0.020	1758.889	0.354	0.036	0.028	0.732	1.148	0.041	28.040	0.003	0.004	0.000	

EMFAC 2007 HHDTruck in Kings County

Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)		Start Emission Rate @ 240 min (g/trip)				Hot Soak @ 20 min (g/trip)		Evaporative Running Loss @ 20 min(g/mi)	
		ROG	Nox	CH4	CO2	PM10	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG	
0	40	12.019	109.374	0.558	6461.434	1.697	0.000	0.000	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	12.019	109.374	0.558	6461.434	1.697	0.000	0.000	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
10	40	6.102	26.609	0.284	3147.121	1.570	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	6.113	22.093	0.284	3147.121	1.570	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
15	40	2.945	19.271	0.137	2578.525	1.027	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	2.953	15.992	0.137	2578.525	1.027	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
20	40	1.583	16.465	0.074	2167.081	0.717	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	1.588	13.658	0.074	2167.081	0.717	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
25	40	1.274	15.731	0.060	2026.022	0.602	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	1.278	13.046	0.060	2026.022	0.602	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
30	40	1.032	14.148	0.049	1907.588	0.518	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	1.035	12.560	0.049	1907.588	0.518	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
35	40	0.852	14.716	0.041	1811.481	0.463	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	0.855	12.200	0.041	1811.481	0.463	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
40	40	0.736	14.435	0.035	1737.538	0.439	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	0.738	11.966	0.035	1737.538	0.439	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
45	40	0.681	14.307	0.033	1685.678	0.445	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	0.682	11.857	0.033	1685.678	0.445	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
50	40	0.687	14.329	0.033	1655.881	0.482	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	0.688	11.874	0.033	1655.881	0.482	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
55	40	0.754	14.503	0.036	1648.178	0.548	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	0.756	12.018	0.036	1648.178	0.548	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
60	40	0.882	14.828	0.042	1662.662	0.645	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	0.884	12.287	0.042	1662.662	0.645	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
65	40	1.072	15.305	0.051	1699.514	0.771	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	1.073	12.682	0.051	1699.514	0.771	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
70	40	1.322	15.933	0.062	1759.066	0.928	0.036	0.028	1.933	2.814	0.111	30.306	0.003	0.006	0.001		
	85	1.323	13.202	0.062	1759.066	0.928	0.036	0.028	1.742	2.231	0.100	30.306	0.003	0.012	0.001		
Speed (mph)	Temperature (F)	ROG	Nox	CH4	CO2	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG		
0	40	8.614	118.426	0.400	6456.198	0.556	0.000	0.000	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	8.614	118.426	0.400	6456.198	0.556	0.000	0.000	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
10	40	2.304	9.627	0.108	3145.926	0.324	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	2.309	7.987	0.108	3145.926	0.324	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
15	40	1.106	7.189	0.052	2577.388	0.232	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	1.109	5.960	0.052	2577.388	0.232	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
20	40	0.628	5.986	0.030	2166.032	0.178	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.630	4.959	0.030	2166.032	0.178	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
25	40	0.528	5.529	0.026	2024.936	0.158	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.529	4.578	0.026	2024.936	0.158	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
30	40	0.445	5.150	0.022	1906.503	0.147	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.446	4.263	0.022	1906.503	0.147	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
35	40	0.379	4.849	0.019	1810.416	0.143	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.380	4.012	0.019	1810.416	0.143	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
40	40	0.330	4.627	0.016	1736.503	0.147	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.331	3.827	0.016	1736.503	0.147	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
45	40	0.297	4.484	0.015	1684.677	0.158	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.298	3.707	0.015	1684.677	0.158	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
50	40	0.281	4.418	0.014	1654.916	0.178	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.281	3.652	0.014	1654.916	0.178	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
55	40	0.280	4.431	0.014	1647.254	0.205	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.281	3.662	0.014	1647.254	0.205	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
60	40	0.296	4.523	0.015	1661.789	0.240	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.296	3.737	0.015	1661.789	0.240	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
65	40	0.327	4.693	0.016	1698.714	0.283	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.328	3.878	0.016	1698.714	0.283	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		
70	40	0.374	4.941	0.018	1758.384	0.333	0.036	0.028	1.130	1.967	0.064	31.878	0.003	0.004	0.001		
	85	0.375	4.083	0.018	1758.384	0.333	0.036	0.028	1.027	1.561	0.058	31.878	0.003	0.006	0.001		

EMFAC 2007 HHDTruck in Madera County

Model Year	Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)		Start Emission Rate @ 240 min (g/trip)				Hot Soak @ 20 min (g/trip)
			ROG	Nox	CH4	CO2	PM10	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10
2011	0	40	11.865	109.909	0.551	6466.849	1.642	0.000	0.000	4.500	3.914	0.278	53.323	0.004	0.034
		85	11.865	109.909	0.551	6466.849	1.642	0.000	0.000	4.428	3.058	0.268	53.323	0.004	0.072
	10	40	6.292	26.135	0.292	3148.358	1.574	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	6.291	21.699	0.292	3148.358	1.574	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	15	40	3.044	18.945	0.142	2579.702	1.031	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	3.043	15.721	0.142	2579.702	1.031	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	20	40	1.641	16.169	0.077	2168.166	0.720	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	1.641	13.412	0.077	2168.166	0.720	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	25	40	1.321	15.428	0.062	2027.147	0.605	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	1.321	12.795	0.062	2027.147	0.605	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	30	40	1.070	14.838	0.050	1908.712	0.521	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	1.070	12.304	0.050	1908.712	0.521	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	35	40	0.885	14.399	0.042	1812.583	0.466	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	0.884	11.938	0.042	1812.583	0.466	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	40	40	0.763	14.112	0.036	1738.608	0.443	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	0.763	11.697	0.036	1738.608	0.443	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	45	40	0.705	13.975	0.034	1686.714	0.449	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	0.705	11.582	0.034	1686.714	0.449	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
	50	40	0.711	13.989	0.034	1656.880	0.486	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034
		85	0.710	11.893	0.034	1656.880	0.486	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072
55	40	0.778	14.155	0.037	1649.135	0.553	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034	
	85	0.778	11.729	0.037	1649.135	0.553	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072	
60	40	0.908	14.471	0.043	1663.566	0.650	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034	
	85	0.908	11.991	0.043	1663.566	0.650	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072	
65	40	1.101	14.939	0.052	1700.341	0.778	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034	
	85	1.101	12.378	0.052	1700.341	0.778	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072	
70	40	1.356	15.557	0.064	1759.771	0.936	0.036	0.028	4.500	3.914	0.278	53.323	0.004	0.034	
	85	1.355	12.891	0.064	1759.771	0.936	0.036	0.028	4.428	3.058	0.268	53.323	0.004	0.072	
Model Year	Speed (mph)	Temperature (F)	ROG	Nox	CH4	CO2	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG
2020	0	40	8.478	118.862	0.394	6459.443	0.494	0.000	0.000	1.406	2.100	0.080	33.695	0.003	0.006
		85	8.478	118.862	0.394	6459.443	0.494	0.000	0.000	1.481	1.660	0.084	33.695	0.003	0.010
	10	40	2.242	9.208	0.105	3146.668	0.297	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	2.247	7.640	0.105	3146.668	0.297	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	15	40	1.076	6.893	0.051	2578.094	0.216	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	1.080	5.715	0.051	2578.094	0.216	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	20	40	0.613	5.727	0.030	2166.683	0.167	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	0.615	4.745	0.030	2166.683	0.167	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	25	40	0.516	5.274	0.025	2025.610	0.149	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	0.518	4.368	0.025	2025.610	0.149	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	30	40	0.437	4.897	0.021	1907.176	0.139	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	0.438	4.054	0.021	1907.176	0.139	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	35	40	0.373	4.598	0.018	1811.076	0.136	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	0.374	3.804	0.018	1811.076	0.136	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	40	40	0.325	4.375	0.016	1737.145	0.141	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	0.326	3.619	0.016	1737.145	0.141	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	45	40	0.292	4.230	0.015	1685.298	0.152	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	0.293	3.497	0.015	1685.298	0.152	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
	50	40	0.275	4.161	0.014	1655.515	0.171	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006
		85	0.276	3.439	0.014	1655.515	0.171	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010
55	40	0.273	4.170	0.014	1647.828	0.197	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006	
	85	0.273	3.446	0.014	1647.828	0.197	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010	
60	40	0.285	4.255	0.014	1662.331	0.231	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006	
	85	0.286	3.516	0.014	1662.331	0.231	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010	
65	40	0.313	4.418	0.016	1699.210	0.271	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006	
	85	0.314	3.650	0.016	1699.210	0.271	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010	
70	40	0.356	4.657	0.018	1758.807	0.319	0.036	0.028	1.406	2.100	0.080	33.695	0.003	0.006	
	85	0.357	3.849	0.018	1758.807	0.319	0.036	0.028	1.481	1.660	0.084	33.695	0.003	0.010	

EMFAC 2007 HHDTruck in Merced County

Model Year	Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)		Start Emission Rate @ 240 min (g/trip)				Hot Soak @ 20 min (g/trip)		Evaporative Running Loss @ 20 min(g/mi)	
			ROG	Nox	CH4	CO2	PM10	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG	
2011	0	40	12.038	109.421	0.559	6466.020	1.701	0.000	0.000	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	12.038	109.421	0.559	6466.020	1.701	0.000	0.000	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	10	40	6.865	27.451	0.319	3148.169	1.732	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	6.867	22.791	0.319	3148.169	1.732	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	15	40	3.316	19.871	0.154	2579.522	1.132	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	3.317	16.489	0.154	2579.522	1.132	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	20	40	1.782	16.982	0.083	2168.000	0.789	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	1.783	14.086	0.083	2168.000	0.789	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	25	40	1.433	16.231	0.067	2026.975	0.662	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	1.434	13.461	0.067	2026.975	0.662	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	30	40	1.159	15.635	0.055	1908.540	0.568	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	1.159	12.964	0.055	1908.540	0.568	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	35	40	0.957	15.195	0.045	1812.414	0.508	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	0.957	12.597	0.045	1812.414	0.508	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	40	40	0.826	14.910	0.039	1738.444	0.480	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	0.826	12.359	0.039	1738.444	0.480	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	45	40	0.764	14.780	0.036	1686.556	0.486	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	0.764	12.250	0.036	1686.556	0.486	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	50	40	0.772	14.806	0.037	1656.727	0.526	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	0.772	12.270	0.037	1656.727	0.526	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	55	40	0.849	14.987	0.040	1648.989	0.598	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	0.849	12.419	0.040	1648.989	0.598	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	60	40	0.995	15.323	0.047	1663.427	0.704	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	0.995	12.697	0.047	1663.427	0.704	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	65	40	1.206	15.814	0.057	1700.214	0.843	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	1.210	13.104	0.057	1700.214	0.843	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
	70	40	1.493	16.431	0.070	1759.663	1.015	0.036	0.028	2.948	2.911	0.182	36.079	0.003	0.018	0.001		
		85	1.493	13.640	0.070	1759.663	1.015	0.036	0.028	2.686	2.287	0.164	36.079	0.003	0.038	0.002		
Model Year	Speed (mph)	Temperature (F)	ROG	Nox	CH4	CO2	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG		
2020	0	40	8.598	118.383	0.399	6452.356	0.550	0.000	0.000	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	8.598	118.383	0.399	6452.356	0.550	0.000	0.000	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	10	40	2.504	10.113	0.117	3145.050	0.351	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	2.510	8.389	0.117	3145.050	0.351	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	15	40	1.202	7.558	0.057	2576.554	0.252	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	1.206	6.264	0.057	2576.554	0.252	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	20	40	0.682	6.292	0.033	2165.263	0.192	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.684	5.211	0.033	2165.263	0.192	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	25	40	0.572	5.808	0.028	2024.139	0.171	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.574	4.808	0.028	2024.139	0.171	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	30	40	0.482	5.407	0.024	1905.707	0.158	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.484	4.474	0.024	1905.707	0.158	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	35	40	0.411	5.089	0.020	1809.635	0.154	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.412	4.209	0.020	1809.635	0.154	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	40	40	0.357	4.853	0.018	1735.755	0.158	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.358	4.012	0.018	1735.744	0.158	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	45	40	0.322	4.701	0.016	1683.943	0.171	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.323	3.885	0.016	1683.943	0.171	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	50	40	0.304	4.631	0.015	1654.209	0.192	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.305	3.826	0.015	1654.209	0.192	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	55	40	0.304	4.644	0.015	1646.576	0.221	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.305	3.836	0.015	1646.576	0.221	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	60	40	0.322	4.740	0.016	1661.149	0.259	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.323	3.915	0.016	1661.149	0.259	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	65	40	0.357	4.919	0.018	1698.128	0.305	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.358	4.062	0.018	1698.128	0.305	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		
	70	40	0.409	5.180	0.020	1757.884	0.359	0.036	0.028	1.131	1.938	0.064	29.970	0.003	0.003	0.001		
		85	0.410	4.279	0.020	1757.884	0.359	0.036	0.028	1.085	1.537	0.061	29.970	0.003	0.005	0.001		

EMFAC 2007 HHDtruck in San Joaquin County

Model Year	Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)	Start Emission Rate @ 240 min (g/trip)				Hot Soak @ 20 min (g/trip)			Evaporative Running Loss @ 20 min(g/mi)
			ROG	Nox	CH4	CO2	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG	
2011	0	40	12.286	108.440	0.571	6451.653	1.795	0.000	0.000	2.744	3.669	0.161	44.080	0.004	0.013		
		85	12.286	108.440	0.571	6451.653	1.795	0.000	0.000	2.513	2.902	0.147	44.080	0.004	0.027		
	10	40	6.359	28.185	0.296	3144.889	1.675	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	6.369	23.398	0.296	3144.889	1.675	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	15	40	3.073	20.375	0.143	2576.402	1.094	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	3.080	16.905	0.144	2576.402	1.094	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	20	40	1.650	17.441	0.078	2165.122	0.762	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	1.655	14.464	0.078	2165.122	0.762	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	25	40	1.329	16.700	0.063	2023.993	0.639	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	1.329	13.847	0.063	2023.993	0.639	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	30	40	1.071	16.115	0.051	1905.561	0.549	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	1.074	13.360	0.051	1905.561	0.549	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	35	40	0.883	15.686	0.042	1809.492	0.490	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	0.886	13.002	0.042	1809.492	0.490	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	40	40	0.762	15.413	0.036	1735.604	0.464	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	0.764	12.773	0.037	1735.604	0.464	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	45	40	0.706	15.295	0.034	1683.809	0.470	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	0.707	12.674	0.034	1683.809	0.470	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	50	40	0.714	15.334	0.034	1654.079	0.507	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	0.715	12.704	0.034	1654.079	0.507	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	55	40	0.786	15.528	0.038	1646.452	0.577	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	0.788	12.864	0.038	1646.452	0.577	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
	60	40	0.923	15.878	0.044	1661.031	0.679	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013		
		85	0.924	13.153	0.044	1661.031	0.679	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027		
65	40	1.124	16.383	0.053	1698.021	0.813	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013			
	85	1.125	13.572	0.053	1698.021	0.813	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027			
70	40	1.389	17.045	0.066	1757.792	0.979	0.036	0.028	2.744	3.669	0.161	44.080	0.004	0.013			
	85	1.391	14.121	0.066	1757.792	0.979	0.036	0.028	2.513	2.902	0.147	44.080	0.004	0.027			
Model Year	Speed (mph)	Temperature (F)	ROG	Nox	CH4	CO2	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG	
2020	0	40	8.814	117.963	0.409	6459.688	0.644	0.000	0.000	1.488	2.464	0.084	37.474	0.003	0.006		
		85	8.814	117.963	0.409	6459.688	0.644	0.000	0.000	1.388	1.955	0.078	37.474	0.003	0.008		
	10	40	2.400	10.051	0.112	3146.723	0.368	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	2.406	8.341	0.113	3146.723	0.368	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	15	40	1.151	7.473	0.055	2578.146	0.259	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	1.155	6.197	0.055	2578.146	0.259	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	20	40	0.650	6.241	0.031	2166.731	0.196	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.652	5.172	0.031	2166.731	0.196	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	25	40	0.543	5.789	0.026	2025.660	0.173	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.545	4.795	0.026	2025.660	0.173	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	30	40	0.456	5.415	0.022	1907.226	0.159	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.457	4.484	0.022	1907.226	0.159	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	35	40	0.387	5.120	0.019	1811.126	0.153	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.388	4.238	0.019	1811.126	0.153	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	40	40	0.337	4.904	0.017	1767.193	0.156	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.338	4.058	0.017	1767.193	0.156	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	45	40	0.304	4.767	0.015	1685.345	0.168	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.305	3.943	0.015	1685.345	0.168	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	50	40	0.289	4.708	0.014	1655.560	0.188	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.290	3.893	0.014	1655.560	0.188	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	55	40	0.292	4.728	0.014	1647.870	0.217	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.292	3.909	0.015	1647.870	0.217	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
	60	40	0.312	4.827	0.015	1662.371	0.254	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006		
		85	0.312	3.990	0.015	1662.371	0.254	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008		
65	40	0.349	5.004	0.017	1699.247	0.300	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006			
	85	0.350	4.137	0.017	1699.247	0.300	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008			
70	40	0.404	5.260	0.020	1758.839	0.355	0.036	0.028	1.488	2.464	0.084	37.474	0.003	0.006			
	85	0.405	4.349	0.020	1758.839	0.355	0.036	0.028	1.388	1.955	0.078	37.474	0.003	0.008			

EMFAC 2007 HHDTruck in Stanislaus County

Model Year	Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)	Start Emission Rate @ 240 min (g/trip)				Hot Soak @ 20 min (g/trip)		Evaporative Running Loss @ 20 min(g/mi)	
			ROG	Nox	CH4	CO2	PM10	PM10	PM10	ROG	Nox	CH4	CO2	PM10	ROG	ROG	
2011	0	40	13.859	104.124	0.555	6445.940	2.214	0.000	0.000	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	13.859	104.124	0.555	6445.940	2.214	0.000	0.000	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	10	40	6.499	32.014	0.244	3143.585	1.943	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	6.503	26.579	0.245	3143.585	1.943	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	15	40	3.174	23.074	0.119	2575.162	1.271	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	3.177	19.146	0.119	2575.162	1.271	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	20	40	1.694	19.868	0.065	2163.978	0.887	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	1.695	16.480	0.065	2163.978	0.887	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	25	40	1.357	19.134	0.052	2022.807	0.743	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	1.359	15.868	0.052	2022.807	0.743	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	30	40	1.095	18.565	0.043	1904.376	0.635	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	1.096	15.393	0.043	1904.376	0.635	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	35	40	0.903	18.160	0.035	1808.331	0.561	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	0.903	15.055	0.035	1808.331	0.561	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	40	40	0.780	17.920	0.031	1734.475	0.523	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	0.780	14.854	0.031	1734.475	0.523	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	45	40	0.725	17.845	0.028	1682.716	0.519	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	0.726	14.790	0.029	1682.716	0.519	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	50	40	0.738	17.935	0.029	1653.027	0.551	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	0.739	14.863	0.029	1653.027	0.551	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	55	40	0.818	18.189	0.031	1645.444	0.618	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	0.819	15.073	0.031	1645.444	0.618	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	60	40	0.966	18.608	0.036	1660.078	0.719	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	0.966	15.420	0.036	1660.078	0.719	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	65	40	1.180	19.192	0.044	1697.149	0.856	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	1.181	15.904	0.044	1697.149	0.856	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	70	40	1.462	19.940	0.053	1757.049	1.027	0.036	0.028	3.467	3.858	0.174	59.393	0.004	0.030	0.002	
		85	1.463	16.524	0.054	1757.049	1.027	0.036	0.028	3.076	3.037	0.155	59.393	0.004	0.064	0.002	
	2020	0	40	8.621	118.680	0.400	6468.635	0.554	0.000	0.000	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	8.621	118.680	0.400	6468.635	0.554	0.000	0.000	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		10	40	2.074	7.527	0.097	3148.765	0.291	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	2.077	7.527	0.097	3148.765	0.291	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		15	40	0.994	6.765	0.047	2580.089	0.209	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.997	5.612	0.047	2580.089	0.209	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		20	40	0.565	5.632	0.027	2168.524	0.161	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.567	4.669	0.027	2168.524	0.161	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		25	40	0.476	5.201	0.023	2027.517	0.143	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.477	4.310	0.023	2027.517	0.143	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		30	40	0.402	4.845	0.020	1909.082	0.133	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.403	4.013	0.020	1909.082	0.133	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		35	40	0.343	4.562	0.017	1812.946	0.130	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.344	3.778	0.017	1812.946	0.130	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		40	40	0.299	4.352	0.015	1738.961	0.134	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.300	3.603	0.015	1738.961	0.134	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		45	40	0.263	4.217	0.013	1687.056	0.144	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.270	3.490	0.013	1687.056	0.144	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
		50	40	0.254	4.155	0.013	1657.209	0.162	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001
			85	0.254	3.438	0.013	1657.209	0.162	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001
55		40	0.252	4.168	0.012	1649.450	0.187	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001	
		85	0.253	3.448	0.013	1649.450	0.187	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001	
60		40	0.265	4.254	0.013	1663.863	0.219	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001	
		85	0.265	3.519	0.013	1663.863	0.219	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001	
65		40	0.292	4.413	0.014	1700.613	0.257	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001	
		85	0.292	3.651	0.016	1700.613	0.257	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001	
70		40	0.333	4.647	0.016	1760.004	0.303	0.036	0.028	1.261	2.112	0.071	37.819	0.003	0.006	0.001	
		85	0.333	3.845	0.016	1760.004	0.303	0.036	0.028	1.170	1.676	0.066	37.819	0.003	0.009	0.001	

EMFAC 2007 HHDTruck in Tulare County

Model Year	Speed (mph)	Temperature (F)	Running Exhaust (g/mi)				Tire Wear (g/mi)		Brake Wear (g/mi)	Start Emission Rate @ 240 min (g/trip)					Hot Soak @ 20 min (g/trip)	Evaporative Running Loss @ 20 min(g/mi)	
			ROG	Nox	CH4	CO2	PM10	PM10	PM10	ROG	NOx	CH4	CO2	PM10	ROG	ROG	
2011	0	40	11.714	109.705	0.544	6439.140	1.602	0.000	0.000	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	11.714	109.705	0.544	6439.140	1.602	0.000	0.000	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	10	40	4.962	24.183	0.231	3142.032	1.272	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	4.967	20.072	0.231	3142.032	1.272	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	15	40	2.405	17.564	0.113	2573.684	0.836	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	2.408	14.568	0.113	2573.684	0.836	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	20	40	1.303	14.985	0.062	2162.616	0.586	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	1.305	12.423	0.062	2162.616	0.586	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	25	40	1.051	14.285	0.050	2021.395	0.494	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	1.053	11.840	0.050	2021.395	0.494	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	30	40	0.853	13.727	0.041	1902.966	0.426	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.854	11.347	0.041	1902.966	0.426	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	35	40	0.706	13.310	0.034	1806.947	0.383	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.707	1.026	0.034	1806.947	0.383	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	40	40	0.609	13.036	0.030	1733.131	0.365	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.610	10.797	0.030	1733.131	0.365	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	45	40	0.562	12.903	0.027	1681.415	0.371	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.563	10.685	0.027	1681.415	0.371	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	50	40	0.564	12.911	0.027	1651.773	0.402	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.564	10.690	0.027	1651.773	0.402	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	55	40	0.614	13.062	0.030	1644.243	0.458	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.614	10.814	0.030	1644.243	0.458	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	60	40	0.712	13.354	0.034	1658.945	0.538	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.713	11.055	0.034	1658.945	0.538	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	65	40	0.859	13.788	0.041	1696.110	0.643	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	0.860	11.415	0.041	1696.110	0.643	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
	70	40	1.054	14.364	0.050	1756.163	0.773	0.036	0.028	3.423		4.238	0.206	59.212	0.005	0.025	0.002
		85	1.055	11.892	0.050	1756.163	0.773	0.036	0.028	3.063		3.346	0.183	59.212	0.005	0.052	0.002
2020	0	40	8.518	118.791	0.396	6461.073	0.514	0.000	0.000	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	8.518	118.791	0.396	6461.073	0.514	0.000	0.000	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	10	40	1.999	8.789	0.094	3147.039	0.267	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	2.003	7.293	0.094	3147.039	0.267	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	15	40	0.960	6.572	0.046	2578.448	0.194	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.963	5.449	0.046	2578.448	0.194	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	20	40	0.548	5.465	0.027	2167.009	0.150	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.550	4.528	0.027	2167.009	0.150	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	25	40	0.462	5.038	0.023	2025.948	0.135	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.464	4.173	0.023	2025.948	0.135	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	30	40	0.391	4.684	0.019	1907.514	0.126	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.393	3.878	0.019	1907.514	0.126	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	35	40	0.335	4.403	0.017	1811.408	0.123	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.336	3.643	0.017	1811.408	0.123	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	40	40	0.292	4.194	0.014	1737.467	0.127	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.292	3.469	0.014	1737.467	0.127	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	45	40	0.262	4.058	0.013	1685.610	0.138	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.263	3.356	0.013	1685.610	0.138	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	50	40	0.246	3.995	0.012	1655.815	0.155	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.247	3.303	0.012	1655.815	0.155	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	55	40	0.243	4.004	0.012	1648.115	0.178	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.244	3.310	0.012	1648.115	0.178	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	60	40	0.254	4.087	0.013	1662.602	0.209	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.254	3.378	0.013	1662.602	0.209	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	65	40	0.277	4.242	0.014	1699.459	0.245	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.278	3.506	0.014	1699.459	0.245	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001
	70	40	0.314	4.470	0.015	1759.019	0.288	0.036	0.028	1.450		2.460	0.082	40.000	0.004	0.007	0.001
		85	0.315	3.695	0.015	1759.019	0.288	0.036	0.028	1.344		1.952	0.076	40.000	0.004	0.010	0.001